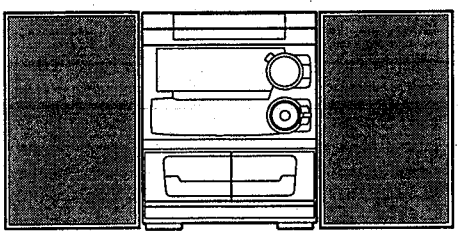
aiwa

aiwa SERVICE

NSX-MT320
NSX-MT321

SERVICE MANUAL



COMPACT DISC STEREO
CASSETTE RECEIVER

- BASIC TAPE MECHANISM : 6ZM-3 PR1NM
- BASIC CD MECHANISM : 4ZG-1 Z3DSHNM
- TYPE : U

SYSTEM	SUB WOOFER	CD – CASSEIVER	SPEAKER	REMOTE CONTROLLER
NSX-MT320	–	CX-NMT320	SX-NA302 SX-R275 SX-C605	RC-8AS
NSX-MT321	TS-W35			

- If requiring information about the CD mechanism, see Service Manual of 4ZG-1, S/M Code No. 09-983-249-30T.
- If requiring information about the Sub woofer, see Service Manual of original. S/M Code No. 09-976-204-00I.

S/M Code No. 09–985–257–6FE

TABLE OF CONTENTS

SPECIFICATIONS 3
PROTECTION OF EYES FROM LASER BEAM DURING SERVICING 4
PRECAUTION TO REPLACE OPTICAL BLOCK 4
NOTE ON BEFORE STARTING REPAIR 5, 6
ELECTRICAL MAIN PARTS LIST ..... 7 ~ 10
TRANSISTOR ILLUSTRATION 11
BLOCK DIAGRAM – 1 (TUNER) 12
BLOCK DIAGRAM – 2 (MAIN / FRONT / PRO) ..... 13 ~ 15
SCHEMATIC DIAGRAM – 1 (MAIN 1/2) ..... 16 ~ 18
WIRING – 1 (MAIN) 19, 20
WIRING – 2 (FRONT) 21, 22
SCHEMATIC DIAGRAM – 2 (FRONT) ..... 23 ~ 25
SCHEMATIC DIAGRAM – 3 (TUNER FRONT END) 26
IC BLOCK DIAGRAM – 1 ..... 26, 27
SCHEMATIC DIAGRAM – 4 (PRO) ..... 27 ~ 28
WIRING – 3 (PRO) 29, 30
SCHEMATIC DIAGRAM – 5 (MAIN 2/2) 31, 32
WIRING – 4 (AC) 33
WIRING – 5 (DECK) 34
FL GRID ASSIGNMENT AND ANODE CONNECTION 35
IC BLOCK DIAGRAM – 2 ..... 36, 38
IC DESCRIPTION ..... 39 ~ 41
ADJUSTMENT <TUNER / DECK> 42, 43
PRACTICAL SERVICE FIGURE 44
MECHANICAL EXPLODED VIEW 1 / 1 ..... 45, 46
MECHANICAL PARTS LIST 1 / 1 47
TAPE MECHANISM EXPLODED VIEW 1 / 1 ..... 48, 49
TAPE MECHANISM PARTS LIST 1 / 1 50
SPRING APPLICATION POSITION 51
SPEAKER DISASSEMBLY INSTRUCTIONS 52
SPEAKER PARTS LIST 53
ACCESSORIES / PACKAGE LIST 53
REFERENCE NAME LIST 54

SPECIFICATIONS

<FM Tuner section>

Tuning range	87.5 MHz to 108 MHz
Usable sensitivity (IHF)	13.2 dBf
Antenna terminals	75 ohms (unbalanced)

<AM Tuner section>

Tuning range	531 kHz to 1602 kHz (9 kHz step) 530 kHz to 1710 kHz (10 kHz step)
Usable sensitivity	350 µV/m
Antenna	Loop antenna

<Amplifier section>

Power output	**Front** 30 W + 30 W (50 Hz – 20 kHz, THD less than 1%, 6 ohms) **Rear (Surround)** Rated : 10 W +10 W (1 kHz,THD less than 1%, 8 ohms) **Center** 20 W (1 kHz,THD less than 1%, 8 ohms)
Inputs	VIDEO/AUX : 150 mV (adjustable) MIC : 1.8 mV (10 kohms)
Outputs	SPEAKERS: accept speakers of 6 ohms or more SURROUND SPEAKERS : accept speakers of 8 ohms to 16 ohms CENTER SPEAKER : accept speakers of 8 ohms or more PHONES (stereo jack) : accepts headphones of 32 ohms or more

<Cassette deck section>

Track format	4 tracks, 2 channels stereo
Frequency response	50 Hz – 15000 Hz
Recording system	AC bias
Heads	Deck 1 : Playback head x 1 Deck 2 : Recording/playback/ erase head x 1

<Compact disc player section>

Laser	Semiconductor laser (λ =780 nm)
D-A converter	1 bit dual
Signal-to-noise ratio	85 dB (1 kHz, 0 dB)
Harmonic distortion	0.05% (1 kHz, 0 dB)
Wow and flutter	Unmeasurable

<Speaker system SX-NA302>

Cabinet type	3 way, bass reflex (magnetic shielded type)
Speakers	Woofer : 160 mm ($6^3/_8$ in.) cone type Tweeter : 80 mm ($3^1/_4$ in.) cone type Super tweeter : 20 mm ($^{13}/_{16}$ in.) ceramic type
Impedance	6 ohms
Output sound pressure level	87 dB/W/m
Dimensions (W x H x D)	240 x 324 x 283 mm ($9^1/_2$ x $12^7/_8$ x $11^1/_4$ in.)
Weight	5.2 kg (11 lbs 7 oz.)

<General>

Power requirements	120 V AC, 60Hz
Power consumption	120 W
Dimensions of main unit (W x H x D)	260 x 330 x 346 mm ($10^1/_4$ x 13 x $13^5/_8$ in.)
Weight of main unit	6.9 kg (15 lbs 3 oz.)

- Design and specifications are subject to change without notice.
- Manufactured under license from Dolby Laboratories Licensing Corporation.

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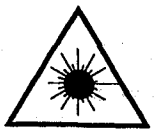
PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!
WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when *open and interlocks defeated avoid exposure* to beam.
- Advarsel: Usynlig laserståling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!
Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!
Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION
Use of controls or adjustments or performance of procedures *other than those specified herein may result in hazardous radiation exposure.*

ATTENTION
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!
Usynlig laserståling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT

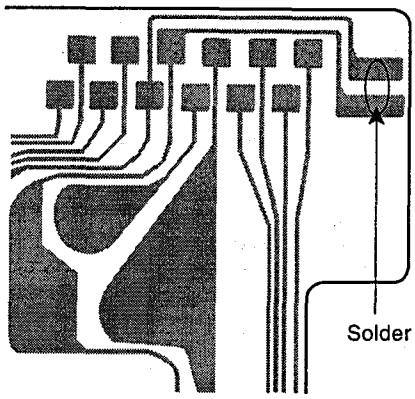
Precaution to replace Optical block

(KSS – 213F)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in right figure.

PICK-UP Assy P.C.B



NOTE ON BEFORE STARTING REPAIR

1. Forced discharge of electrolytic capacitor of power supply block

When repair is going to be attempted in the set that uses relay circuit in the power supply block, electric potential is kept charged across the electrolytic capacitors (C101, 102) even though AC power cord is removed. If repair is attempted in this condition, the secondary defect can occur.
In order to prevent the secondary trouble, perform the following measures before starting repair work.

Discharge procedure

① Remove the AC power cord.
② Connect a discharging resistor at an end of lead wire that has clips at both ends. Connect the other end of the lead wire to metal chassis.
③ Contact the other end of the discharging resistor to the positive (+) side (+VH) of C101. (For two seconds)
④ Contact the same end of the discharging resistor as step ③ to the negative (-) side (-VH) of C102 in the same way. (For two seconds)
⑤ Check that voltage across C101 and C102 has decreased 1 V or less using a multimeter or an oscilloscope.

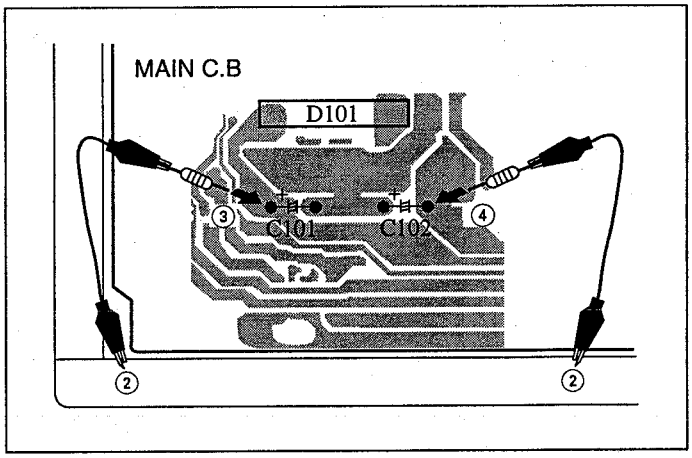


Fig-1

Select a discharging resistor referring to the following table.

Charging voltage (V) (C101, 102)	Discharging resistor (Ω)	Rated power (W)	Parts number
25-48	100	3	87-A00-247-090
49-140	220	5	87-A00-232-090

Note: The reference numbers (C101, C102) of the electrolytic capacitors can change depending on the models. Be sure to check the reference numbers of the charging capacitors on schematic diagram before starting the discharging work.

2. Check items before exchanging the MICROCOMPUTER

Be sure to check the following items before exchanging the MICROCOMPUTER. Exchange the MICROCOMPUTER after confirming that the MICROCOMPUTER is surely defective.

2-1. Regarding the HOLD terminal of the MICROCOMPUTER

When the HOLD terminal (INPUT) of the MICROCOMPUTER is "H", the MICROCOMPUTER is judged to be operating correctly. When this terminal is "L", the main power cannot be turned on. Therefore, be sure to check the terminal voltage of the HOLD terminal before exchange.
When the MICROCOMPUTER is not defective, the HOLD terminal can also go "L" when the POWER AMPLIFIER has any abnormalities that triggers the abnormality detection circuit on the MAIN C. B. that sets the HOLD terminal to "L".

- Good or no good judgement of the MICROCOMPUTER

① Turn on the AC main power.
② Confirm that the main power is turned on and the HOLD terminal of the MICROCOMPUTER keeps the "H" level or not.
③ When the HOLD terminal is "L" level, the abnormality detection circuit is judged to be working correctly and the MICROCOMPUTER is judged to be good.

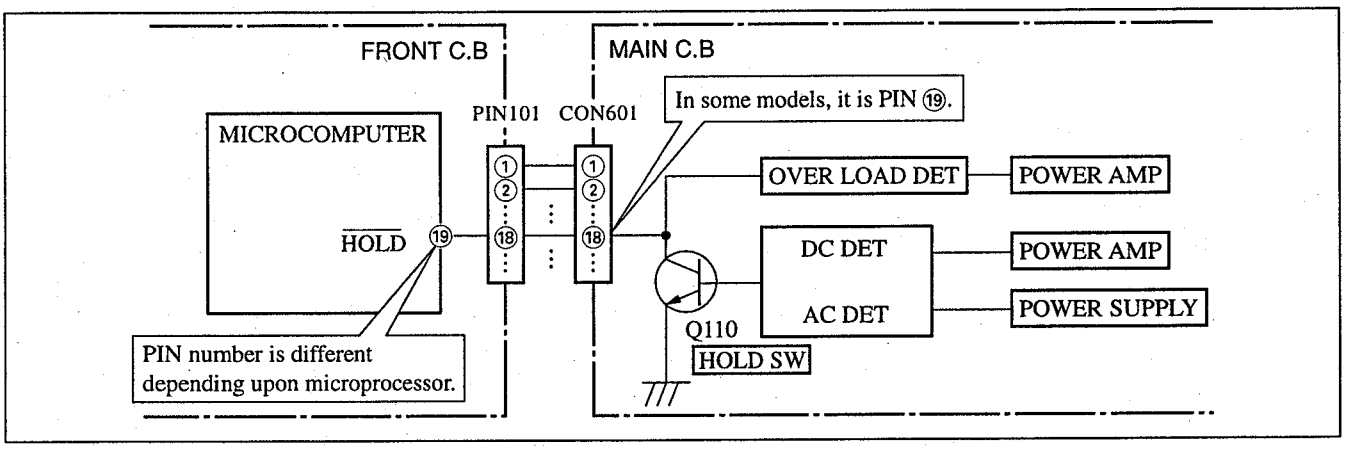


Fig-2-1

In such a case, check also if the POWER AMPLIFIER circuit or power supply circuit has any abnormalities or not.

2-2. Regarding reset

There are cases that the machine does not work correctly because the MICROCOMPUTER is not reset even though the AC power cord is re-inserted, or the software reset (pressing the STOP key + POWER key) is performed.
When the above described phenomenon occurs, it can leads to wrong judgement as if the MICROCOMPUTER is defective and to exchange the MICROCOMPUTER. In such a case, perform the forced-reset by the following procedure and check good or no good of the MICROCOMPUTER.

① Remove the AC power cord.

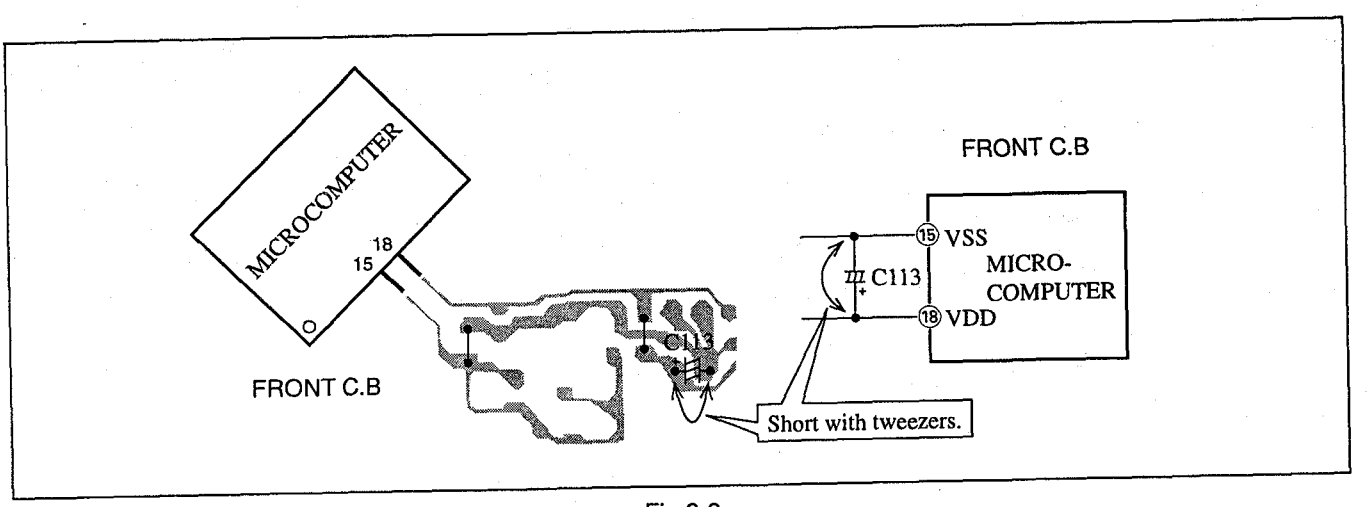


Fig-2-2

② Short both ends of the electrolytic capacitor C113 that is connected to VDD of the MICROCOMPUTER with tweezers.
③ Connect the AC power cord again. If the MICROCOMPUTER returns to the normal operation, the MICROCOMPUTER is good.

Note: The reference number or MICROCOMPUTER pin number of transistor (Q110) and electrolytic capacitor (C113) can change depending on the models. Be sure to check the reference numbers on schematic diagram before starting the discharging work.

2-3. Confirmation of soldering state of MICROCOMPUTER

Check the soldering state of the MICROCOMPUTER in addition to the above described procedures. Be sure to exchange the MICROCOMPUTER after surely confirming that the trouble is not caused by poor soldering but the MICROCOMPUTER itself.

ELECTRICAL MAIN PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A20-083-010		IC,BA3835S
	88-NFV-602-010		C-IC,UPD780228-019-3BA
	87-NF8-614-010		IC,SPS-442-1-W
	87-017-915-080		IC,BU4094BCF
	87-A20-783-040		C-IC,BA7762AFS
	87-017-888-080		IC,NJM4558MD
	87-A20-954-040		C-IC,M62445FP-601
	86-NFZ-655-010		IC,LC72131D(Z)
	87-A20-438-010		IC,LA1837
	87-020-454-010		IC,DN6851
	87-A20-853-010		C-IC,M62463FP
TRANSISTOR			
	89-213-702-010		TR,2SB1370 (1.8W)
	87-026-610-080		TR,KTC3198GR
	87-A30-076-080		C-TR,2SC3052F
	87-A30-196-080		TR,2SC4115SRS
	87-A30-075-080		C-TR,2SA1235F
	87-026-609-080		TR,KTA1266GR
	87-A30-198-080		TR,KTC3199GR
	87-A30-074-080		C-TR,RT1P 141C
	87-A30-071-080		C-TR,RT1N 144C
	87-A30-087-080		C-FET,2SK2158
	87-A30-107-070		C-TR,CMBT5401
	87-026-263-080		C-TR,RN1410
	87-A30-190-080		TR,CC5551
	87-A30-106-070		C-TR,CMBT5551
	87-A30-109-010		TR,2SD2495
	87-A30-108-010		TR,2SB1626
	87-A30-221-080		C-TR,DTA114WK
	87-A30-159-080		C-TR,KTA1298Y
	89-112-965-080		TR,2SA1296 (0.75W)
	87-A30-073-080		C-TR,RT1N 141C
	87-A30-105-080		C-TR,RT1P 441C
	87-026-238-080		C-TR,DTC144WK
	89-327-143-080		C-TR,2SC2714 (0.1W)
	87-A30-072-080		C-TR,RT1P 144C
	87-A30-214-010		TR,2SB1344
	87-A30-215-010		TR,2SD2025
	87-A30-086-070		C-TR,CSD1306E
DIODE			
	87-002-225-010		DIODE,DBF40C-K10
	87-A40-505-040		C-DIODE,KDS181
	87-A40-504-040		C-DIODE,KDS184
	87-070-274-080		DIODE,1N4003 SEM
	87-A40-435-080		ZENER,MTZJ30D
	87-A40-345-080		ZENER,MTZJ10C
	87-A40-004-080		ZENER,MTZJ16A
	87-A40-470-080		DIODE,1SS254
	87-A40-509-080		ZENER,MTZJ6.8C
	87-A40-488-080		DIODE,1SS244
	87-017-932-080		ZENER,MTJ6.2B
	87-A40-002-080		ZENER,MTZJ5.1C
	87-A40-438-080		ZENER,MTZJ4.7A
	87-A40-234-080		ZENER,MTZJ5.6A
	87-A40-116-060		DIODE,RS403L-B-D-5L
MAIN C.B			
C109	87-010-196-080		CHIP CAPACITOR,0.1-25
C110	87-010-196-080		CHIP CAPACITOR,0.1-25
C111	87-010-196-080		CHIP CAPACITOR,0.1-25
C112	87-010-196-080		CHIP CAPACITOR,0.1-25
C113	87-010-407-080		CAP, ELECT 33-50V
C114	87-010-407-080		CAP, ELECT 33-50V
C115	87-010-407-080		CAP, ELECT 33-50V
C116	87-010-407-080		CAP, ELECT 33-50V
C117	87-010-430-080		CAP, ELECT 100-63
C118	87-010-263-080		CAP, ELECT 100-10V
C119	87-010-260-080		CAP, ELECT 47-25V
C120	87-010-403-080		CAP, ELECT 3.3-50V
C121	87-012-140-080		CAP 470P
C122	87-010-263-080		CAP, ELECT 100-10V
C123	87-010-247-080		CAP, ELECT 100-50V
C124	87-010-112-080		CAP, ELECT 100-16V
C125	87-010-235-080		CAP,E 470-16 SME
C153	87-010-917-090		CAP,E 3300-50 M SMG
C154	87-010-917-090		CAP,E 3300-50 M SMG
C209	87-010-546-080		CAP, ELECT 0.33-50V
C210	87-010-546-080		CAP, ELECT 0.33-50V
C211	87-010-185-080		C-CAP,S 3900P-50 B
C212	87-010-185-080		C-CAP,S 3900P-50 B
C213	87-010-186-080		CAP,CHIP 4700P
C214	87-010-186-080		CAP,CHIP 4700P
C215	87-010-403-080		CAP, ELECT 3.3-50V
C216	87-010-403-080		CAP, ELECT 3.3-50V
C217	87-010-260-080		CAP, ELECT 47-25V
C218	87-010-260-080		CAP, ELECT 47-25V
C229	87-A10-812-080		C-CAP,S 220P-200 J CH
C230	87-A10-812-080		C-CAP,S 220P-200 J CH
C233	87-010-544-080		CAP, ELECT 0.1-50V
C234	87-010-544-080		CAP, ELECT 0.1-50V
C237	87-012-368-080		C-CAP,S 0.1-50 F
C238	87-012-368-080		C-CAP,S 0.1-50 F
C239	87-012-368-080		C-CAP,S 0.1-50 F
C240	87-012-368-080		C-CAP,S 0.1-50 F
C280	87-010-188-080		C-CAP,S 6800P-50 B
C301	87-010-318-080		C-CAP,S 47P-50 CH
C302	87-010-318-080		C-CAP,S 47P-50 CH
C303	87-012-157-080		C-CAP,S 330P-50 CH
C304	87-012-157-080		C-CAP,S 330P-50 CH
C305	87-012-145-080		CAP, CHIP S 270P CH
C306	87-012-145-080		CAP, CHIP S 270P CH
C307	87-010-196-080		CHIP CAPACITOR,0.1-25
C309	87-010-196-080		CHIP CAPACITOR,0.1-25
C310	87-010-196-080		CHIP CAPACITOR,0.1-25
C311	87-010-198-080		CAP, CHIP 0.022
C312	87-010-198-080		CAP, CHIP 0.022
C313	87-010-180-080		CAP,CHIP S 1500P-50 KB
C314	87-010-180-080		CAP,CHIP S 1500P-50 KB
C315	87-010-182-080		CHIP CAP 2200P-50 KB
C316	87-010-182-080		CHIP CAP 2200P-50 KB
C321	87-016-492-080		C-CAP,S 0.33-16 FZ
C322	87-016-492-080		C-CAP,S 0.33-16 FZ
C324	87-010-260-080		CAP, ELECT 47-25V
C325	87-010-370-080		CAP,E 330-6.3 SME
C327	87-010-404-080		CAP, ELECT 4.7-50V
C328	87-010-404-080		CAP, ELECT 4.7-50V
C332	87-010-196-080		CHIP CAPACITOR,0.1-25
C335	87-010-401-080		CAP, ELECT 1-50V
C336	87-010-401-080		CAP, ELECT 1-50V
C337	87-010-196-080		CHIP CAPACITOR,0.1-25
C339	87-010-196-080		CHIP CAPACITOR,0.1-25
C340	87-010-196-080		CHIP CAPACITOR,0.1-25
C351	87-012-140-080		CAP 470P
C352	87-012-140-080		CAP 470P
C354	87-010-175-080		CAP 560P
C355	87-012-349-080		C-CAP,S 1000P-50 CH
C356	87-010-260-080		CAP, ELECT 47-25V
C357	87-010-197-080		CAP, CHIP 0.01 DM
C358	87-010-183-080		C-CAP,S 2700P-50 B
C359	87-010-183-080		C-CAP,S 2700P-50 B
C360	87-010-183-080		C-CAP,S 2700P-50 B
C370	87-010-196-080		CHIP CAPACITOR,0.1-25
C373	87-016-083-080		C-CAP,S 0.15-16 RK

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C374	87-016-083-080		C-CAP,S 0.15-16 RK
C378	87-010-196-080		CHIP CAPACITOR,0.1-25
C379	87-010-382-080		CAP, ELECT 22-25V
C380	87-010-382-080		CAP, ELECT 22-25V
C386	87-010-196-080		CHIP CAPACITOR,0.1-25
C401	87-010-405-080		CAP, ELECT 10-50V
C402	87-010-405-080		CAP, ELECT 10-50V
C457	87-010-404-080		CAP, ELECT 4.7-50V
C458	87-010-404-080		CAP, ELECT 4.7-50V
C516	87-010-196-080		CHIP CAPACITOR,0.1-25
C601	87-010-180-080		C-CER 1500P
C602	87-010-180-080		C-CER 1500P
C613	87-010-196-080		CHIP CAPACITOR,0.1-25
C614	87-010-196-080		CHIP CAPACITOR,0.1-25
C619	87-010-185-080		C-CAP,S 3900P-50 B
C620	87-010-185-080		C-CAP,S 3900P-50 B
C621	87-010-401-080		CAP, ELECT 1-50V
C622	87-010-401-080		CAP, ELECT 1-50V
C629	87-010-405-080		CAP, ELECT 10-50V
C630	87-010-213-080		C-CAP,S 0.015-50 B
C631	87-010-194-080		CAP, CHIP 0.047
C632	87-010-263-080		CAP, ELECT 100-10V
C633	87-010-263-080		CAP, ELECT 100-10V
C634	87-010-196-080		CHIP CAPACITOR,0.1-25
C635	87-010-196-080		CHIP CAPACITOR,0.1-25
C636	87-010-194-080		CAP, CHIP 0.047
C637	87-010-183-080		C-CAP,S 2700P-50 B
C641	87-010-196-080		CHIP CAPACITOR,0.1-25
C701	87-010-381-080		CAP, ELECT 330-16V
C702	87-010-404-080		CAP, ELECT 4.7-50V
C703	87-010-197-080		CAP, CHIP 0.01 DM
C704	87-010-197-080		CAP, CHIP 0.01 DM
C709	87-010-322-080		C-CAP,S 100P-50 CH
C711	87-010-263-080		CAP, ELECT 100-10V
C712	87-010-196-080		CHIP CAPACITOR,0.1-25
C713	87-010-197-080		CAP, CHIP 0.01 DM
C714	87-010-197-080		CAP, CHIP 0.01 DM
C721	87-010-312-080		C-CAP,S 15P-50 CH
C722	87-010-312-080		C-CAP,S 15P-50 CH
C723	87-010-178-080		CHIP CAP 1000P
C725	87-010-178-080		CHIP CAP 1000P
C727	87-010-196-080		CHIP CAPACITOR,0.1-25
C728	87-010-248-080		CAP, ELECT 220-10V
C755	87-010-197-080		CAP, CHIP 0.01 DM
C756	87-010-197-080		CAP, CHIP 0.01 DM
C757	87-010-318-080		C-CAP,S 47P-50 CH
C758	87-010-149-080		C-CAP,S 5P-50 CH
C759	87-012-156-080		C-CAP,S 220P-50 J CH
C760	87-012-156-080		C-CAP,S 220P-50 J CH
C761	87-010-196-080		CHIP CAPACITOR,0.1-25
C762	87-010-197-080		CAP, CHIP 0.01 DM
C763	87-010-194-080		CAP, CHIP 0.047
C764	87-010-319-080		C-CAP,S 56P-50 CH
C765	87-010-197-080		CAP, CHIP 0.01 DM
C766	87-010-197-080		CAP, CHIP 0.01 DM
C767	87-010-405-080		CAP, ELECT 10-50V
C768	87-010-197-080		CAP, CHIP 0.01 DM
C769	87-010-408-080		CAP, ELECT 47-50V
C770	87-015-821-080		C-CAP 0.047
C771	87-010-407-080		CAP, ELECT 33-50V
C772	87-010-194-080		CAP, CHIP 0.047
C773	87-010-196-080		CHIP CAPACITOR,0.1-25
C774	87-010-263-080		CAP, ELECT 100-10V
C775	87-010-404-080		CAP, ELECT 4.7-50V
C776	87-010-197-080		CAP, CHIP 0.01 DM
C777	87-010-400-080		CAP, ELECT 0.47-50V
C778	87-010-401-080		CAP, ELECT 1-50V
C779	87-010-401-080		CAP, ELECT 1-50V
C780	87-010-196-080		CHIP CAPACITOR,0.1-25
C781	87-010-405-080		CAP, ELECT 10-50V
C782	87-010-405-080		CAP, ELECT 10-50V
C783	87-015-819-080		CAPACITOR,0.01
C784	87-010-197-080		CAP, CHIP 0.01 DM
C785	87-010-403-080		CAP, ELECT 3.3-50V
C786	87-010-403-080		CAP, ELECT 3.3-50V
C789	87-010-179-080		CAP,CHIP S B1200P
C790	87-010-179-080		CAP,CHIP S B1200P
C791	87-010-405-080		CAP, ELECT 10-50V
C793	87-010-177-080		C-CAP,S 820P-50 SL
C794	87-010-406-080		CAP, ELECT 22-50
C795	87-010-596-080		CAP, S 0.047-16
C796	87-010-403-080		CAP, ELECT 3.3-50V
C797	87-010-181-080		C-CAP,S 1800P-50 B
C798	87-010-181-080		C-CAP,S 1800P-50 B
C799	87-010-194-080		CAP, CHIP 0.047
C812	87-010-197-080		CAP, CHIP 0.01 DM
C814	87-010-197-080		CAP, CHIP 0.01 DM
C820	87-010-408-080		CAP, ELECT 47-50V
C821	87-010-197-080		CAP, CHIP 0.01 DM
C822	87-010-197-080		CAP, CHIP 0.01 DM
C823	87-010-197-080		CAP, CHIP 0.01 DM
C828	87-010-196-080		CHIP CAPACITOR,0.1-25
C829	87-010-196-080		CHIP CAPACITOR,0.1-25
C959	87-010-196-080		CHIP CAPACITOR,0.1-25
C960	87-010-196-080		CHIP CAPACITOR,0.1-25
C961	87-010-152-080		C-CAP,S 8P-50 CH
CF801	87-008-261-010		FILTER, SFE10.7MA5-A
CF802	87-008-261-010		FILTER, SFE10.7MA5-A
FFE801	A8-8ZA-190-030		8ZA-1 FEUNM
J201	87-A60-483-010		JACK,DIA6.3 BLK ST W/S KM
J203	87-033-240-010		TERMINAL,SP 4P32SV1-05
J212	87-A60-399-010		JACK,PIN 1P BLK HSP-241VBL
J601	87-A60-425-010		JACK,PIN 2P YKC21-3828
J801	87-A60-202-010		TERMINAL,ANT 4P MSP-154V-02
L201	87-003-383-010		COIL,1UH-S
L202	87-003-383-010		COIL,1UH-S
L301	87-A50-049-010		COIL,TRAP 85K(COI)
L302	87-A50-049-010		COIL,TRAP 85K(COI)
L351	87-007-342-010		COIL,OSC 85K BIAS
L771	87-A50-266-010		COIL,FM DET-2N(TOK)
L772	87-A90-733-010		FLTR,PCFAZH-450 (TOK)
L781	87-005-847-080		COIL,2.2UH(CECS)
L832	86-NFZ-694-080		COIL,2.2UH K CECS
L981	87-NF4-650-010		COIL,AM PACK 4N(TOK)
R123	87-022-200-080		RESISTOR, METAL 0.56 1W
R237	87-A00-257-080		RES,M/F 0.15-1W J
R238	87-A00-257-080		RES,M/F 0.15-1W J
R239	87-A00-257-080		RES,M/F 0.15-1W J
R240	87-A00-257-080		RES,M/F 0.15-1W J
R629	87-029-082-010		RES,FUSE 100-1/4W
SFR351	87-A90-433-080		SFR,50K H NVZ6TLTA
SFR352	87-A90-433-080		SFR,50K H NVZ6TLTA
X721	87-A70-061-010		VIB,XTAL 4.500MHZ CSA-309

FRONT C.B

	88-911-091-110	FF-CABLE,11P 1.25
	88-913-321-110	FF-CABLE,13P 1.25 320MM
	88-906-251-110	FF-CABLE,6P 1.25
C36	87-010-322-080	C-CAP,S 100P-50 CH
C37	87-010-322-080	C-CAP,S 100P-50 CH
C38	87-010-322-080	C-CAP,S 100P-50 CH
C39	87-010-322-080	C-CAP,S 100P-50 CH
C40	87-010-322-080	C-CAP,S 100P-50 CH
C41	87-010-322-080	C-CAP,S 100P-50 CH
C42	87-010-322-080	C-CAP,S 100P-50 CH
C43	87-010-322-080	C-CAP,S 100P-50 CH
C44	87-010-322-080	C-CAP,S 100P-50 CH
C45	87-010-322-080	C-CAP,S 100P-50 CH
C46	87-012-156-080	C-CAP,S 220P-50 CH

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C150	87-010-196-080		CHIP CAPACITOR,0.1-25
C153	87-010-196-080		CHIP CAPACITOR,0.1-25
C154	87-010-196-080		CHIP CAPACITOR,0.1-25
C170	87-010-194-080		CAP, CHIP 0.047
C171	87-010-196-080		CHIP CAPACITOR,0.1-25
C172	87-010-406-040		CAP,E 22-50 M SME
C173	87-010-194-080		CAP, CHIP 0.047
C201	87-018-205-080		CAP, CERA-SOL 0.022
C202	87-010-198-080		CAP, CHIP 0.022
C203	87-010-198-080		CAP, CHIP 0.022
C204	87-012-140-080		CAP 470P
C205	87-010-316-080		C-CAP,S 33P-50 CH
C206	87-010-318-080		C-CAP,S 47P-50 CH
C207	87-010-312-080		C-CAP,S 15P-50 CH
C208	87-010-196-080		CHIP CAPACITOR,0.1-25
C209	87-010-494-040		CAP,E 1-50 GAS
C210	87-A10-189-040		CAP,E 220-10
C211	87-010-194-080		CAP, CHIP 0.047
C212	87-010-555-040		CAP,E 100-10 GAS
C213	87-010-196-080		CHIP CAPACITOR,0.1-25
C214	87-010-405-040		CAP,E 10-50
C215	87-012-156-080		C-CAP,S 220P-50 CH
C216	87-012-156-080		C-CAP,S 220P-50 CH
C217	87-010-197-080		CAP, CHIP 0.01 DM
C250	87-010-196-080		CHIP CAPACITOR,0.1-25
C270	87-010-196-080		CHIP CAPACITOR,0.1-25
C307	87-015-686-040		CAP,E 22-25 M 7L SRA
C354	87-010-196-080		CHIP CAPACITOR,0.1-25
C355	87-010-196-080		CHIP CAPACITOR,0.1-25
C373	87-010-196-080		CHIP CAPACITOR,0.1-25
C376	87-012-158-080		C-CAP,S 390P-50 CH
C378	87-010-196-080		CHIP CAPACITOR,0.1-25
C401	87-010-405-040		CAP,E 10-50
C402	87-010-405-040		CAP,E 10-50
C404	87-010-194-080		CAP, CHIP 0.047
C405	87-010-246-040		CAP,E 47-35 SME
C406	87-010-197-080		CAP, CHIP 0.01 DM
C501	87-010-401-040		CAP,E 1-50 SME
C502	87-010-177-080		C-CAP,S 820P-50 SL
C504	87-010-546-040		CAP,E 0.33-50 SME
C505	87-010-321-080		CHIP CAPACITOR,82P(J)
C506	87-010-405-040		CAP,E 10-50
C508	87-010-248-040		CAP,E 220-10 SME
C509	87-010-545-040		CAP,E 0.22-50 SME
C511	87-010-406-040		CAP,E 22-50 SME
C513	87-010-405-040		CAP,E 10-50
C514	87-010-186-080		CAP,CHIP 4700P
CON102	87-099-015-010		CONN,13P 6216V
CON301	87-099-013-010		CONN,11P 6216 V
CON601	87-099-016-010		CONN,14P 6216V
EMI501	87-008-372-080		FILTER, EMI BL OIRNI
FL401	88-NF8-603-010		FL,SVA-11MM12
J501	87-A60-284-010		JACK,3.5MO (MSC)
LED208	87-070-281-080		LED,SLZ736A-25H-S-T1 P-GRN
LED209	87-070-281-080		LED,SLZ736A-25H-S-T1 P-GRN
LED210	87-070-281-080		LED,SLZ736A-25H-S-T1 P-GRN
LED211	87-070-281-080		LED,SLZ736A-25H-S-T1 P-GRN
LED213	87-070-281-080		LED,SLZ736A-25H-S-T1 P-GRN
LED222	87-070-201-080		LED,SLP9118C-51-S RED
LED223	87-070-201-080		LED,SLP9118C-51-S RED
LED224	87-070-201-080		LED,SLP9118C-51-S RED
LED225	87-070-201-080		LED,SLP9118C-51-S RED
LED226	87-070-201-080		LED,SLP9118C-51-S RED
LED227	87-070-201-080		LED,SLP9118C-51-S RED
LED228	87-070-201-080		LED,SLP9118C-51-S RED
LED229	87-070-201-080		LED,SLP9118C-51-S RED
S401	87-A90-680-080		SW,TACT KSM0612BTS
S402	87-A90-680-080		SW,TACT KSM0612BTS
S403	87-A90-680-080		SW,TACT KSM0612BTS
S404	87-A90-680-080		SW,TACT KSM0612BTS
S405	87-A90-680-080		SW,TACT KSM0612BTS
S406	87-A90-680-080		SW,TACT KSM0612BTS
S407	87-A90-680-080		SW,TACT KSM0612BTS
S408	87-A90-680-080		SW,TACT KSM0612BTS
S409	87-A90-680-080		SW,TACT KSM0612BTS
S410	87-A90-680-080		SW,TACT KSM0612BTS
S411	87-A90-680-080		SW,TACT KSM0612BTS
S412	87-A90-680-080		SW,TACT KSM0612BTS
S413	87-A90-680-080		SW,TACT KSM0612BTS
S414	87-A90-680-080		SW,TACT KSM0612BTS
S415	87-A90-680-080		SW,TACT KSM0612BTS
S416	87-A90-680-080		SW,TACT KSM0612BTS
S417	87-A90-680-080		SW,TACT KSM0612BTS
S418	87-A90-680-080		SW,TACT KSM0612BTS
S419	87-A90-680-080		SW,TACT KSM0612BTS
S420	87-A90-680-080		SW,TACT KSM0612BTS
S421	87-A90-680-080		SW,TACT KSM0612BTS
S423	87-A90-680-080		SW,TACT KSM0612BTS
S425	87-A90-680-080		SW,TACT KSM0612BTS
SW201	87-A90-535-010		SW,RTRY EC16B24304
SW202	88-NF8-615-010		SW,RTRY EC16B24204L=25
X201	87-A70-075-080		VIB,CER 4.19MHZ CRHF

PRO C.B

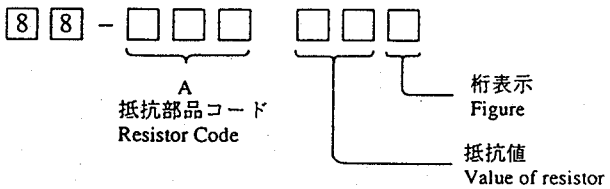
C101	87-012-368-080		C-CAP,S 0.1-50 Z F
C102	87-012-368-080		C-CAP,S 0.1-50 Z F
C103	87-016-051-090		CAP,E 2200-35 M SMG
C104	87-016-051-090		CAP,E 2200-35 M SMG
C106	87-010-196-080		C-CAP,S 0.1-25 Z F
C111	87-010-178-080		C-CAP,S 1000P-50 K B
C207	87-010-545-080		CAP,E 0.22-50 M SME
C209	87-010-180-080		C-CAP,S 1500P-50 K B
C211	87-010-404-080		CAP,E 4.7-50 M SME
C217	87-010-406-080		CAP,E 22-50 M SME
C219	87-A10-596-080		C-CAP,S 100P-100 J CH
C221	87-A10-899-080		CAP,E 47-25 M BP
C223	87-010-544-080		CAP,E 0.1-50 M SME
C225	87-010-993-080		C-CAP,S 0.056-25 K B
C227	87-010-196-080		C-CAP,S 0.1-25 Z F
C229	87-A10-799-080		C-CAP,S 5600P-16 J B
C230	87-A10-799-080		C-CAP,S 5600P-16 J B
C233	87-010-263-080		CAP,E 100-10 SME
C234	87-010-235-080		CAP,E 470-16 SME
C307	87-010-545-080		CAP,E 0.22-50 M SME
C309	87-010-181-080		C-CAP, 1800P-50 K B
C311	87-010-404-080		CAP,E 4.7-50 M SME
C317	87-010-408-080		CAP,E 47-50 M SME
C319	87-A10-596-080		C-CAP,S 100P-100 J CH
C321	87-A10-899-080		CAP,E 47-25 M BP
C323	87-010-544-080		CAP,E 0.1-50 M SME
C325	87-010-993-080		C-CAP,S 0.056-25 K B
C327	87-010-196-080		C-CAP,S 0.1-25 Z F
C329	87-A10-799-080		C-CAP,S 5600P-16 J B
C333	87-010-263-080		CAP,E 100-10 SME
C501	87-010-176-080		C-CAP,S 680P-50 J SL
C502	87-010-176-080		C-CAP,S 680P-50 J SL
C503	87-A10-804-080		C-CAP,S 0.1-25 J B
C504	87-A10-804-080		C-CAP,S 0.1-25 J B
C505	87-A10-804-080		C-CAP,S 0.1-25 J B
C506	87-A10-804-080		C-CAP,S 0.1-25 J B
C509	87-010-112-080		CAP,E 100-16 M SME
C510	87-010-221-080		CAP,E 470-10 M SME
C511	87-A10-891-080		CAP,E 4.7-25 SME(K)
C512	87-A10-800-080		C-CAP,S 6800P-16 J B
C513	87-010-374-080		CAP,E 47-10 M SME
C514	87-010-196-080		C-CAP,S 0.1-25 Z F
C515	87-010-400-080		CAP,E 0.47-50 M SME
C516	87-010-400-080		CAP,E 0.47-50 M SME
C519	87-010-544-080		CAP,E 0.1-50 M SME

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C520	87-010-546-080		CAP,E 0.33-50 SME
C522	87-018-209-080		CAP,TC U 0.1-50 Z F
C524	87-010-374-080		CAP,E 47-10 M SME
C526	87-010-196-080		C-CAP,S 0.1-25 Z F
C530	87-010-544-080		CAP,E 0.1-50 M SME
C531	87-010-546-080		CAP,E 0.33-50 SME
C532	87-010-971-080		C-CAP,S 4700P-50 J B
C533	87-012-349-080		C-CAP,S 1000P-50 J CH
C538	87-010-971-080		C-CAP,S 4700P-50 J B
C539	87-012-349-080		C-CAP,S 1000P-50 J CH
C540	87-010-401-080		CAP,E 1-50 M SME
C541	87-010-401-080		CAP,E 1-50 M SME
C542	87-A10-799-080		C-CAP,S 5600P-16 J B
C543	87-A10-802-080		C-CAP,S 0.047-16 J B
C544	87-A10-229-080		C-CAP,S 0.68-10 K
C545	87-012-393-080		C-CAP,S 0.22-16 K
C546	87-012-393-080		C-CAP,S 0.22-16 K
C547	87-010-404-080		CAP,E 4.7-50 M SME
C548	87-010-404-080		CAP,E 4.7-50 M SME
C549	87-012-393-080		C-CAP,S 0.22-16 K
C550	87-012-393-080		C-CAP,S 0.22-16 K
C551	87-016-081-080		C-CAP,S 0.1-16 K R
C552	87-A10-802-080		C-CAP,S 0.047-16 J B
C553	87-A10-802-080		C-CAP,S 0.047-16 J B
C554	87-016-081-080		C-CAP,S 0.1-16 K R
C555	87-016-081-080		C-CAP,S 0.1-16 K R
C556	87-A10-801-080		C-CAP,S 0.022-16 J B
C557	87-A10-801-080		C-CAP,S 0.022-16 J B
C558	87-016-081-080		C-CAP,S 0.1-16 K R
C579	87-010-402-080		CAP,E 2.2-50 M SME
C580	87-010-402-080		CAP,E 2.2-50 M SME
J202	87-A60-605-010		JACK,3P W/R/O YKC21-3948
L201	87-003-383-010		COIL,1UH K
L202	87-003-383-010		COIL,1UH K
L301	87-003-383-010		COIL,1UH K
R243	87-A00-258-080		RES,M/F 0.22-1W J
R245	87-A00-258-080		RES,M/F 0.22-1W J
R343	87-A00-258-080		RES,M/F 0.22-1W J
R345	87-A00-258-080		RES,M/F 0.22-1W J
R509	87-022-214-080		C-RES,S 100K-1/10W F

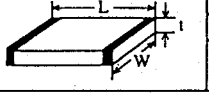
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
AC1 C.B			
⚠ F101	87-035-416-010		FUSE,3A 250V T 239
⚠ FC101	87-A90-505-080		FUSE CLAMP,TP00351-51
⚠ FC102	87-A90-505-080		FUSE CLAMP,TP00351-51
⚠ PT101	88-NFV-604-010		PT,8NF-28U
⚠ T101	87-A60-317-010		TERMINAL, 1P MSC
⚠ T102	87-A60-317-010		TERMINAL, 1P MSC
AC2 C.B			
⚠ PR101	87-026-691-080		FUSE,10A 125V 251
⚠ PR102	87-026-691-080		FUSE,10A 125V 251
⚠ PR105	87-A90-210-080		FUSE,7A 125V 251
⚠ PR106	87-A90-210-080		FUSE,7A 125V 251
W104	85-NF5-628-010		F-CABLE 7P-2.5
DECK C.B			
CON105	87-099-753-019		CONN,11P H 9604
CON301	86-ZM3-604-219		CON ASSY,3P-PB
CON351	86-ZM3-605-119		CON ASSY,8P-RPB
SFR1	87-024-581-089		SFR,3.3K DIA 6H
SOL1	82-ZM1-618-410		SOL ASSY,27
SOL2	82-ZM1-618-410		SOL ASSY,27
SW1	87-A90-248-010		SW,MICRO ESE11SH2CX0
SW2	87-A90-248-010		SW,MICRO ESE11SH2CX0
SW3	87-A90-248-010		SW,MICRO ESE11SH2CX0
SW4	87-A90-248-010		SW,MICRO ESE11SH2CX0
SW5	87-A90-248-010		SW,MICRO ESE11SH2CX0
W1	82-ZM3-601-019		RBN-CORD,4P-75

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

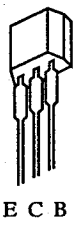
容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm) 外形／Form	L	W	t	抵抗コード ：A Resistor Code: A
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

TRANSISTOR ILLUSTRATION

KTC3198
KTA1266

CC5551

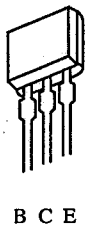
2SB1370



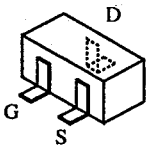
KTC3199

2SA1296

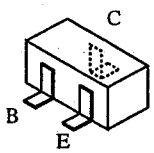
2SB1626
2SB1344
2SD2025
2SD2495



2SC4115S

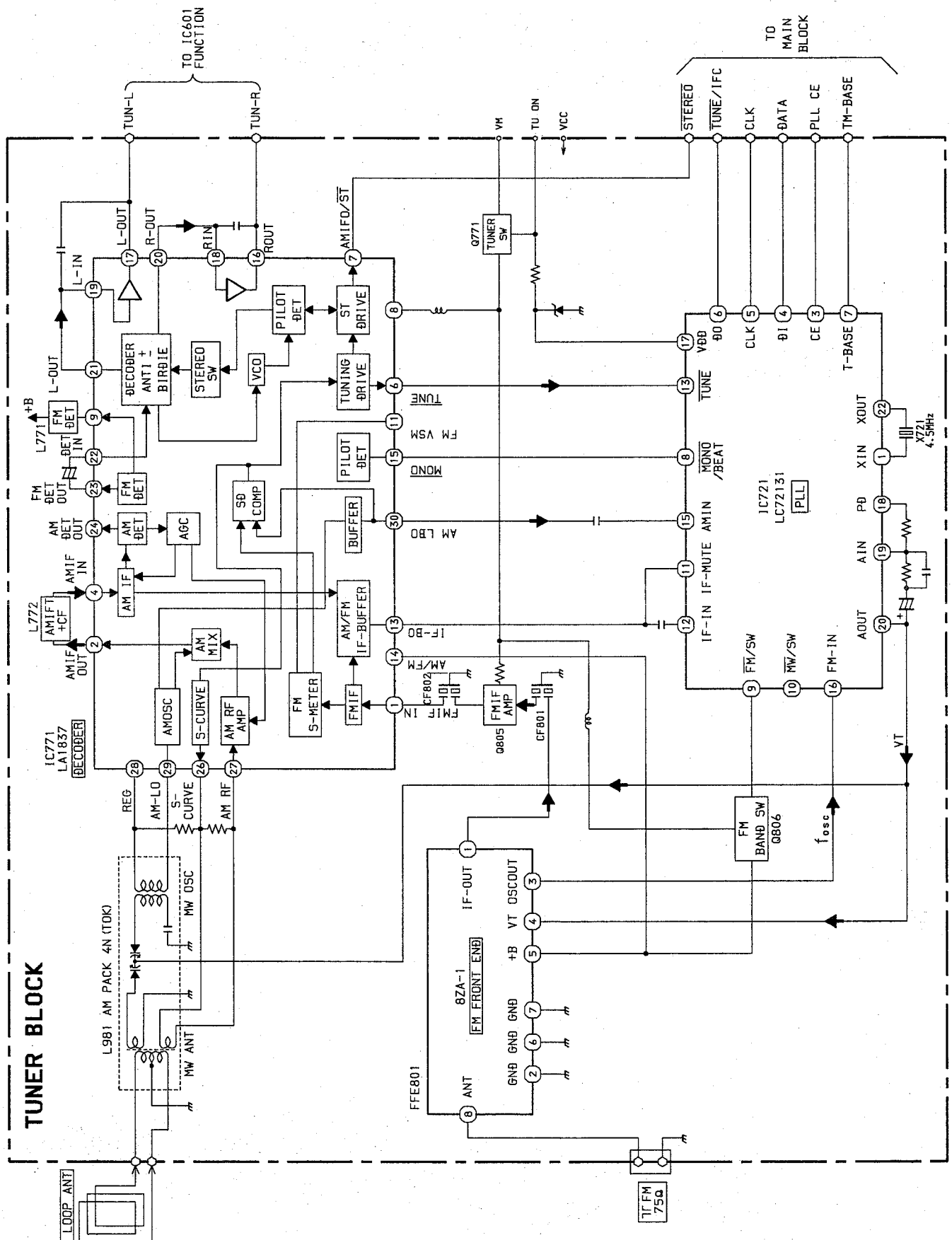


2SK2158

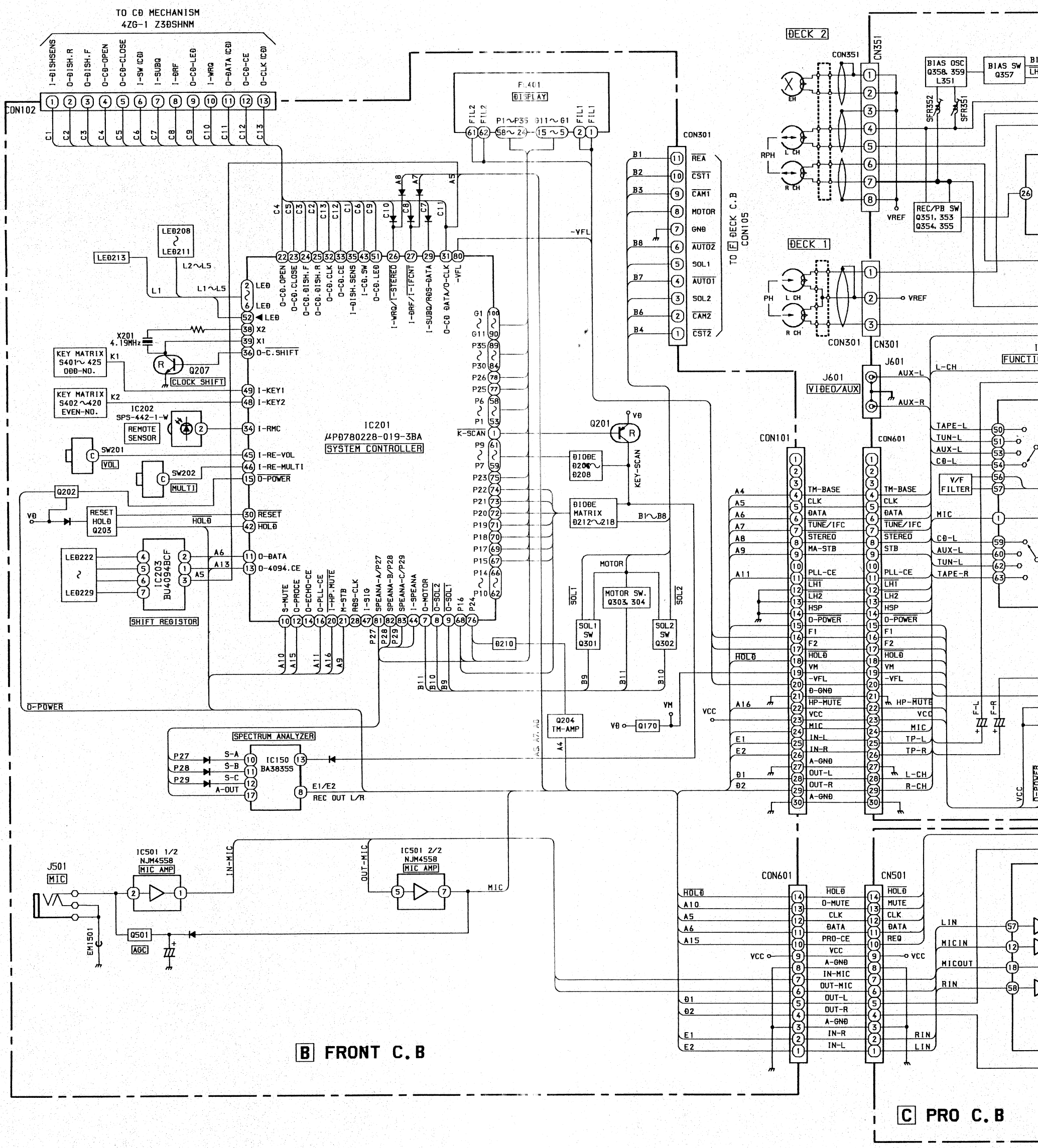


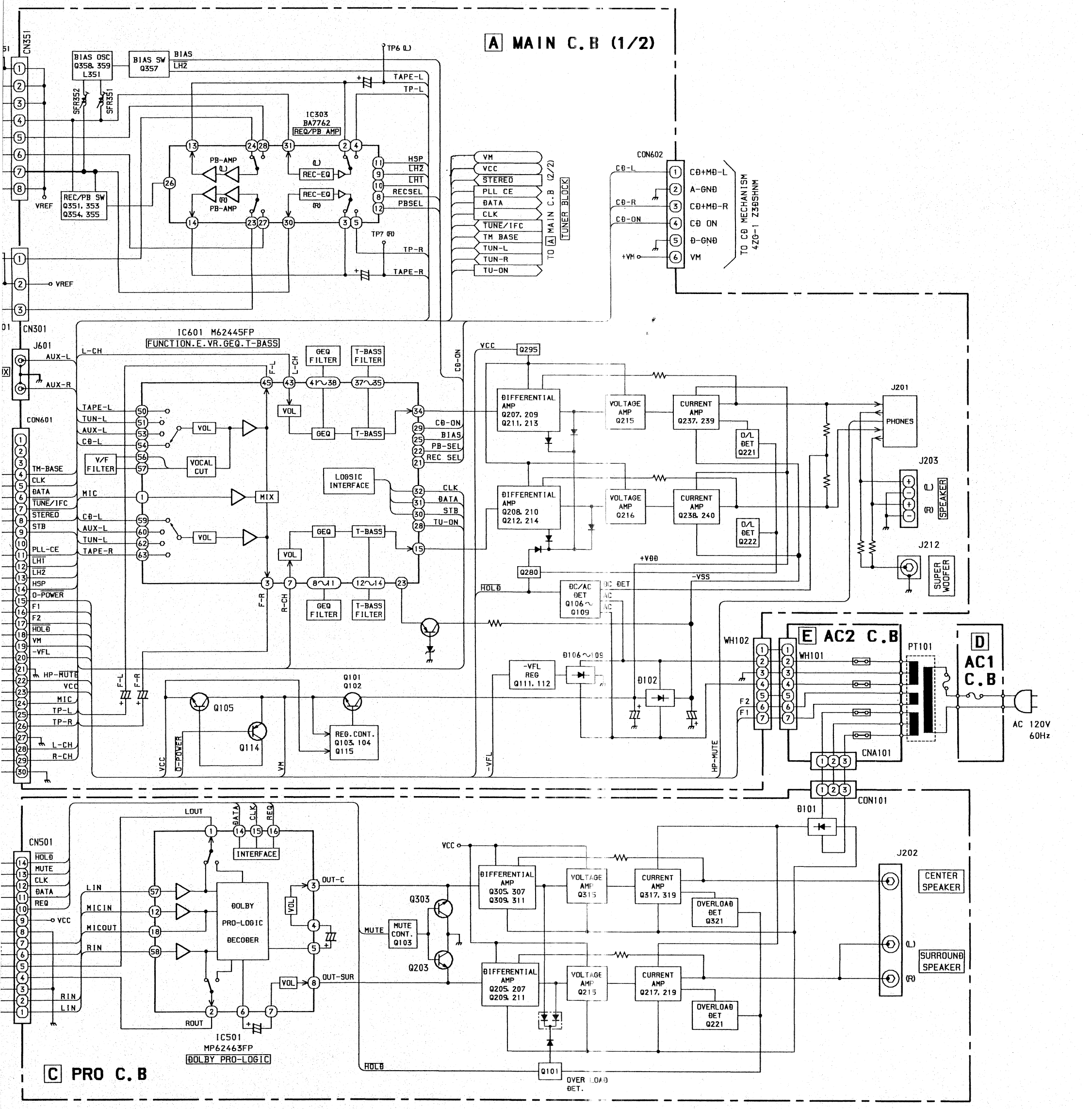
DTA114WK
DTC144WK
CSD1306E
CMBT5551
CMBT5401
2SA1235F
2SC3052F
2SC2714(O)
RN1410
RT1N141C
RT1N144C
RT1P141C
RT1P441C
RT1P144C
KTA1298Y

BLOCK DIAGRAM – 1 (TUNER)

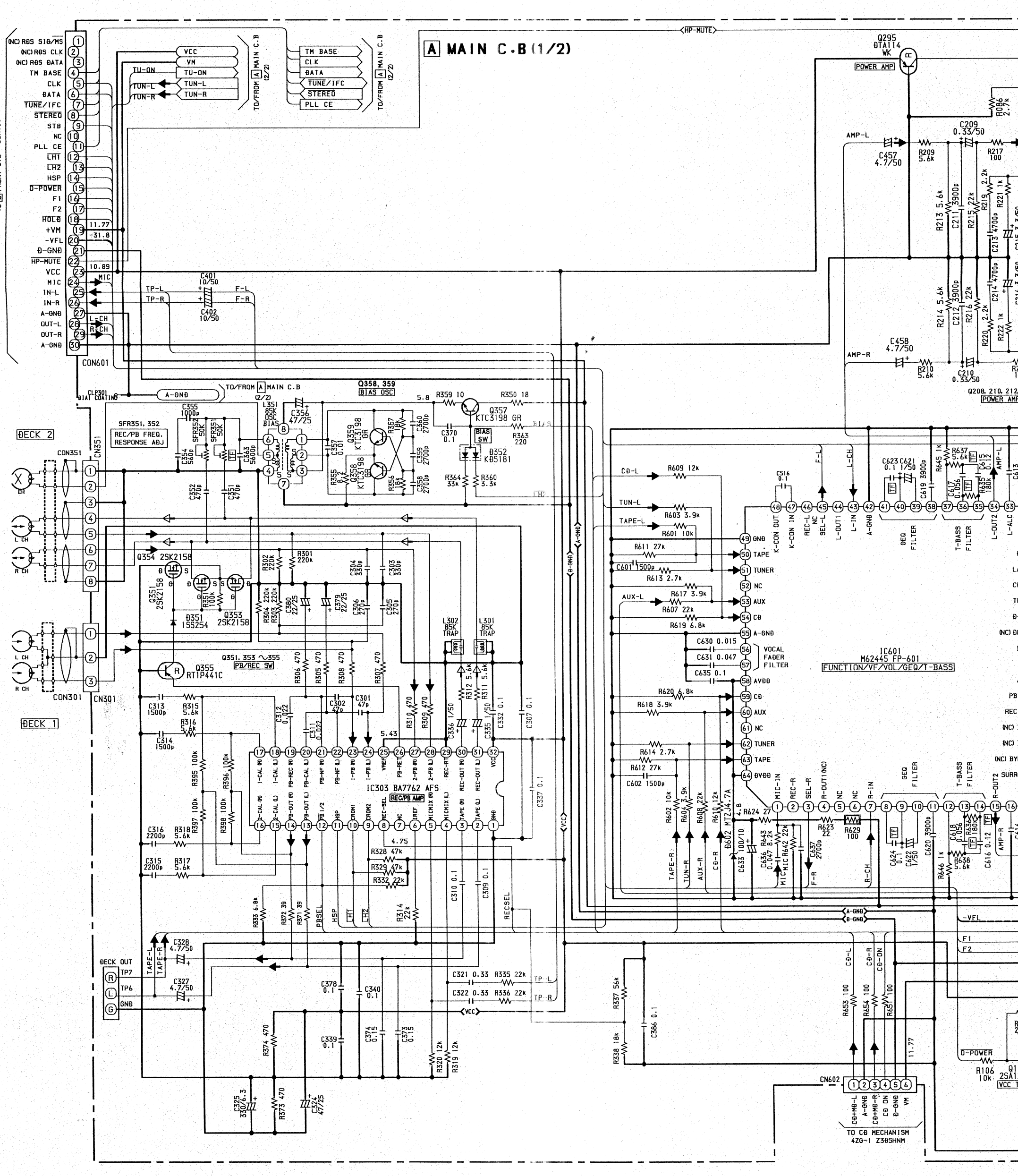


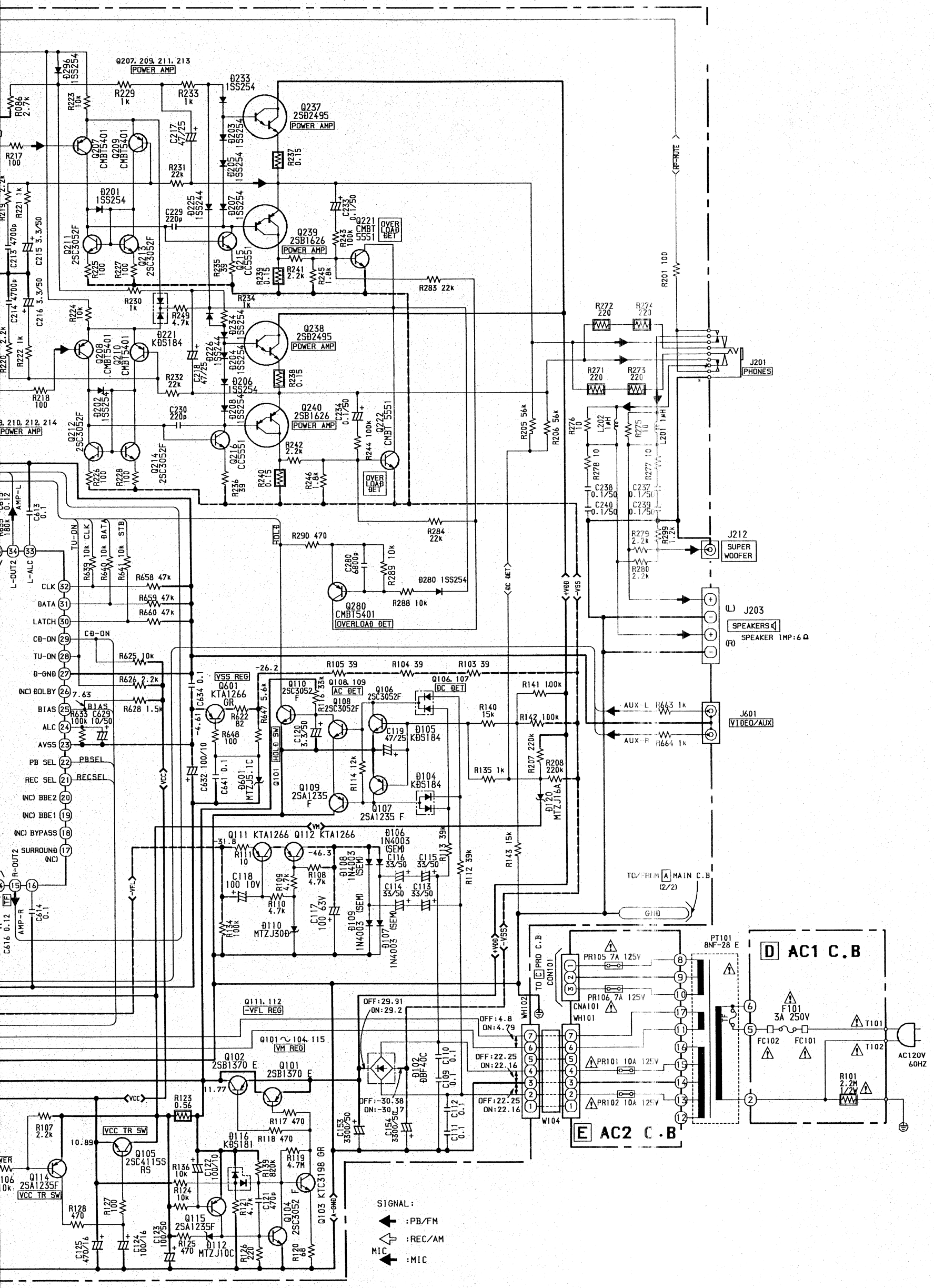
BLOCK DIAGRAM – 2 (MAIN / FRONT / PRO)




A MAIN C.B (1/2)
CN351
BIAS OSC Q358, 359 L351
BIAS SW Q357
BIAS
LH2
TP6 (L)
TAPE-L
TP-L
SFR352
SFR351
IC303 BA7762 REQ/PB AMP
PB-AMP (L)
REC-EQ (L)
PB-AMP (R)
REC-EQ (R)
HSP
LH2
LHT
RECSEL
PBSEL
REC/PB SW Q351, 353 Q354, 355
VREF
TP7 (R)
TP-R
TAPE-R
VM
VCC
STEREO
PLL CE
DATA
CLK
TUNE/IFC
TM BASE
TUN-L
TUN-R
TU-ON
TO A MAIN C.B (2/2)
TUNER BLOCK
CON602
CD-L
CD-R
CD-ON
+VM
CD+MD-L
A-GND
CD+MD-R
CD ON
D-GND
VM
TO CD MECHANISM 4ZG-1 Z38SHNM
CN301
J601
AUX-L
AUX-R
IC601 M62445FP
FUNCTION.E.VR.GEQ.T-BASS
L-CH
F-L
L-CH
GEQ FILTER
T-BASS FILTER
VOL
GEQ
T-BASS
CD-ON
BIAS
PB-SEL
REC SEL
CON601
TAPE-L
TUN-L
AUX-L
CD-L
V/F FILTER
VOCAL CUT
TM-BASE
CLK
DATA
TUNE/IFC
STEREO
STB
MIC
MIX
LOGSIC INTERFACE
PLL-CE
LHT
LH2
HSP
O-POWER
F1
F2
HOLD
VM
-VFL
HP-MUTE
VCC
MIC
TP-L
TP-R
L-CH
R-CH
F-R
R-CH
F-L
F-R
Q101
Q102
Q105
Q114
REG.CONT. Q103, 104 Q115
VCC
O-POWER
VM
-VFL
HP-MUTE
Q295
DIFFERENTIAL AMP Q207, 209 Q211, 213
VOLTAGE AMP Q215
CURRENT AMP Q237, 239
O/L DET Q221
DIFFERENTIAL AMP Q208, 210 Q212, 214
VOLTAGE AMP Q216
CURRENT AMP Q238, 240
O/L DET Q222
Q280
+VDD
-VSS
HOLD
DC/AC DET Q106 ~ Q109
DC DET
AC
AC
D106 ~ 109
-VFL REG Q111, 112
D102
J201
PHONES
J203
(L)
(R)
SPEAKER
J212
SUPER WOOFER
WH102
WH101
E AC2 C.B
PT101
D AC1 C.B
AC 120V 60Hz
CNA101
CON101
D101
CN501
HOLD
MUTE
CLK
DATA
REQ
VCC
LIN
MICIN
MICOUT
RIN
RIN
LIN
LOUT
DATA
CLK
REQ
INTERFACE
DOLBY PRO-LOGIC DECODER
ROUT
IC501
MP62463FP
DOLBY PRO-LOGIC
OUT-C
OUT-SUR
VOL
Q303
Q203
MUTE
MUTE CONT. Q103
DIFFERENTIAL AMP Q305, 307 Q309, 311
VOLTAGE AMP Q315
CURRENT AMP Q317, 319
OVERLOAD DET Q321
DIFFERENTIAL AMP Q205, 207 Q209, 211
VOLTAGE AMP Q215
CURRENT AMP Q217, 219
OVERLOAD DET Q221
Q101
OVER LOAD DET.
J202
CENTER SPEAKER
(L)
(R)
SURROUND SPEAKER
C PRO C.B

SCHEMATIC DIAGRAM – 1 (MAIN 1 / 2)



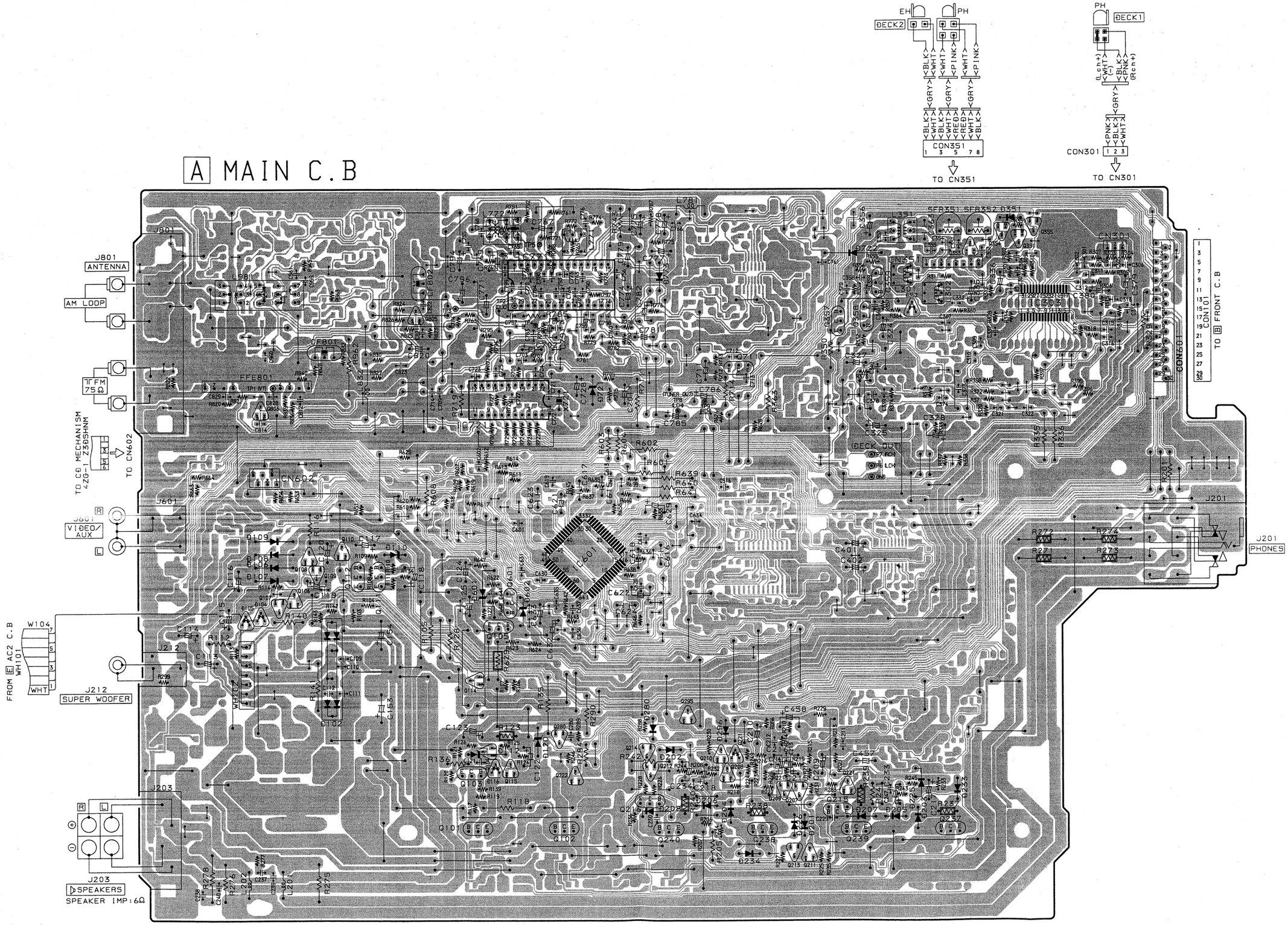

Q207, 209, 211, 213
POWER AMP
D233 1SS254
Q237 2SD2495
POWER AMP
D203 1SS254
D205 1SS254
D207 1SS254
R237 0.15
R229 1k
R233 1k
R223 10k
R217 100
R231 22k
D201 1SS254
D225 1SS244
C229 220p
Q211 2SC3052F
Q213 2SC3052F
R225 100
R227 100
Q215 CC5551
R235 39
R239 0.15
R241 2.2k
R245 1.8k
Q239 2SB1626
POWER AMP
C233 0.1/50
R243 100k
Q221 CMBT 5551
OVER LOAD DET
R283 22k
R230 1k
R234 1k
R249 4.7k
D221 KDS184
D234 1SS254
D226 1SS244
D204 1SS254
D206 1SS254
D208 1SS254
R238 0.15
Q238 2SD2495
POWER AMP
C218 47/25
R232 22k
R218 100
D202 1SS254
C230 220p
Q212 2SC3052F
Q214 2SC3052F
Q216 CC5551
R226 100
R228 100
R236 39
R240 0.15
R242 2.2k
R246 1.8k
Q240 2SB1626
POWER AMP
C234 0.1/50
R244 100k
Q222 CMBT 5551
OVER LOAD DET
R284 22k
R290 470
C280 6800p
R289 10k
D280 1SS254
R288 10k
Q280 CMBT5401
OVERLOAD DET
HOLD
R272 220
R274 220
R271 220
R273 220
J201 PHONES
R205 56k
R206 56k
R276 10
L202 1μH
L201 1μH
R275 10
R278 10
R277 10
C238 0.1/50
C237 0.1/50
C240 0.1/50
C239 0.1/50
R279 2.2k
R299 1.2k
R280 2.2k
J212 SUPER WOOFER
(L) J203 SPEAKERS
SPEAKER IMP:6Ω
(R)
AUX-L R663 1k
AUX-R R664 1k
J601 VIDEO/AUX
R201 100
MP-MUTE
DC DET
+VBB
-VSS
TU-ON
CLK
DATA
LATCH
CB-ON
TU-ON
D-GND
(NC) DOLBY
BIAS
ALC
AVSS
PB SEL
REC SEL
(NC) BBE2
(NC) BBE1
(NC) BYPASS
SURROUND (NC)
L-OUT2
L-ALC
R-OUT2
AMP-L
AMP-R
R658 47k
R659 47k
R660 47k
R625 10k
R626 2.2k
R628 1.5k
R633 100k
C629 10/50
7.63
BIAS
VSS REG
Q601 KTA1266 GR
-26.2
-4.61
C634 0.1
C632 100/10
C641 0.1
D601 MTZJ5.1C
R622 82
R648 100
R647 5.6k
HOLD SW
Q101
R105 39
R104 39
R103 39
Q110 2SC3052 F
Q108, 109
AC DET
Q106, 107
DC DET
Q106 2SC3052F
Q108 2SC3052F
C120 3.3/50
C119 47/25
D105 KDS184
D104 KDS184
Q109 2SA1235 F
Q107 2SA1235 F
R114 12k
R135 1k
R140 15k
R141 100k
R142 100k
R207 220k
R208 220k
D120 MTZJ16A
R143 15k
VCC
VM
VFL
Q111 KTA1266 Q112 KTA1266
-31.8
-46.3
R111 10
R108 4.7k
R109 4.7k
R110 4.7k
C118 100 10V
C117 100 63V
D110 MTZJ30B
D108 1N4003 (SEM)
D109 1N4003 (SEM)
D107 1N4003 (SEM)
D106 1N4003 (SEM)
C116 33/50
C115 33/50
C114 33/50
C113 33/50
R113 39k
R112 39k
R134 100k
C616 0.12
C614 0.1
C613 0.1
C612 0.12
TO/FROM A MAIN C.B (2/2)
GND
TO C PRO C.B CON101
PR105 7A 125V
PR106 7A 125V
CNA101
WH101
WH102
W104
PR101 10A 125V
PR102 10A 125V
PT101 8NF-28 E
D AC1 C.B
E AC2 C.B
F101 3A 250V
FC102
FC101
T101
T102
AC120V 60HZ
R101 2.2M 1/2W
Q111, 112 -VFL REG
Q101~104, 115 VM REG
OFF:29.91 ON:29.2
OFF:4.8 ON:4.79
OFF:22.25 ON:22.16
OFF:22.25 ON:22.16
OFF:-30.38 ON:-30.7
Q102 2SB1370 E
Q101 2SB1370 F
11.77
D102 BBF40C
C109 0.1
C110 0.1
C112 0.1
C111 0.1
C153 3300/50
C154 3300/50
R123 0.56
R117 470
R118 470
D116 KDS181
VCC TR SW
10.89
Q105 2SC4115S R5
R119 4.7M
R139 820k
Q103 KTC3198 GR
R136 10k
R124 10k
C122 100/10
C121 470p
Q104 2SC3052 F
R120 68
R126 220
R125 470
D112 MTZJ10C
C123 100/50
C124 100/16
C125 470/16
R127 100
R128 470
Q114 2SA1235F
R107 2.2k
SIGNAL:
:PB/FM
:REC/AM
MIC
:MIC

WIRING – 1 (MAIN)

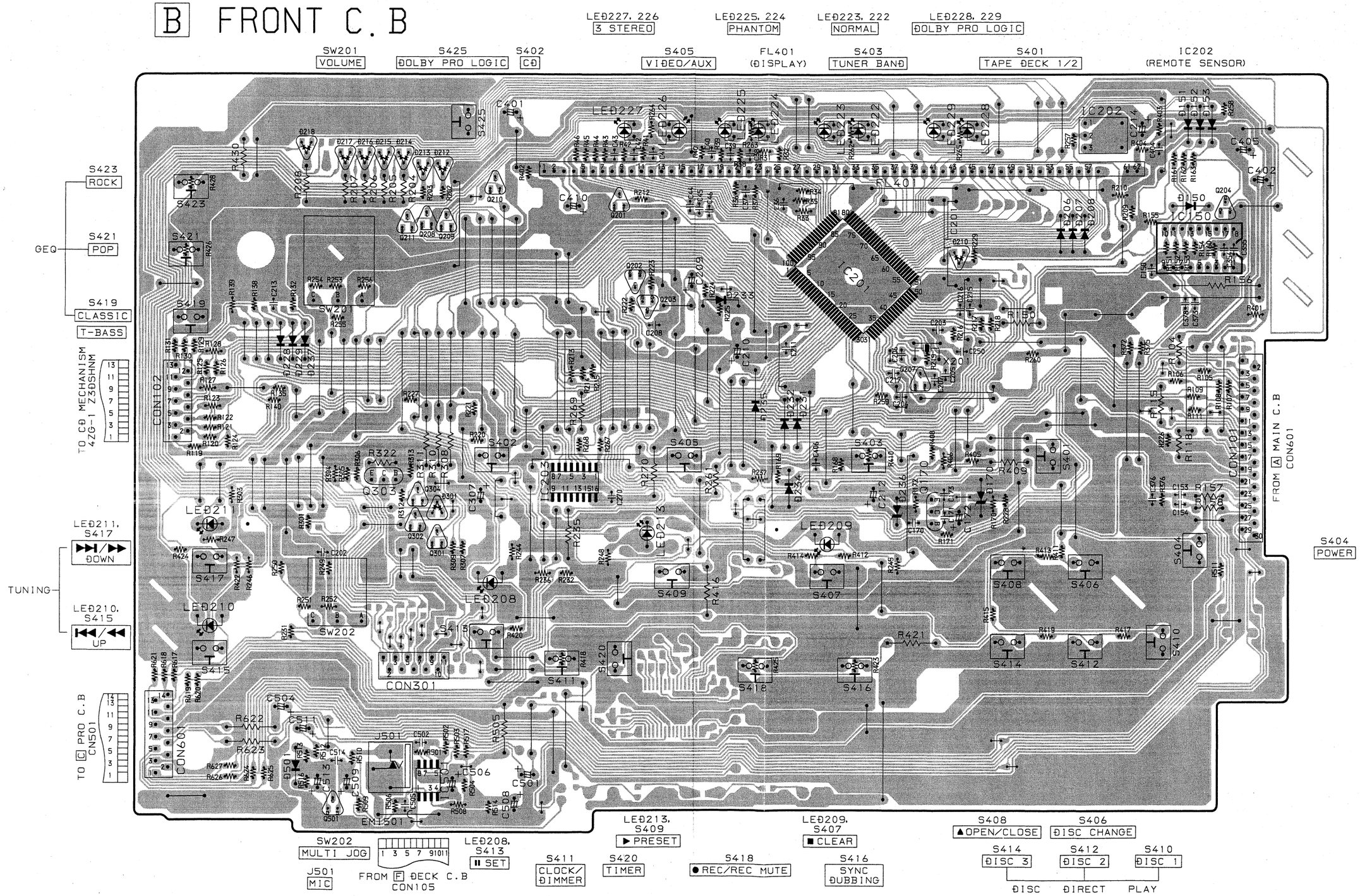
1 2 3 4 5 6 7 8 9 10 11 12 13 14

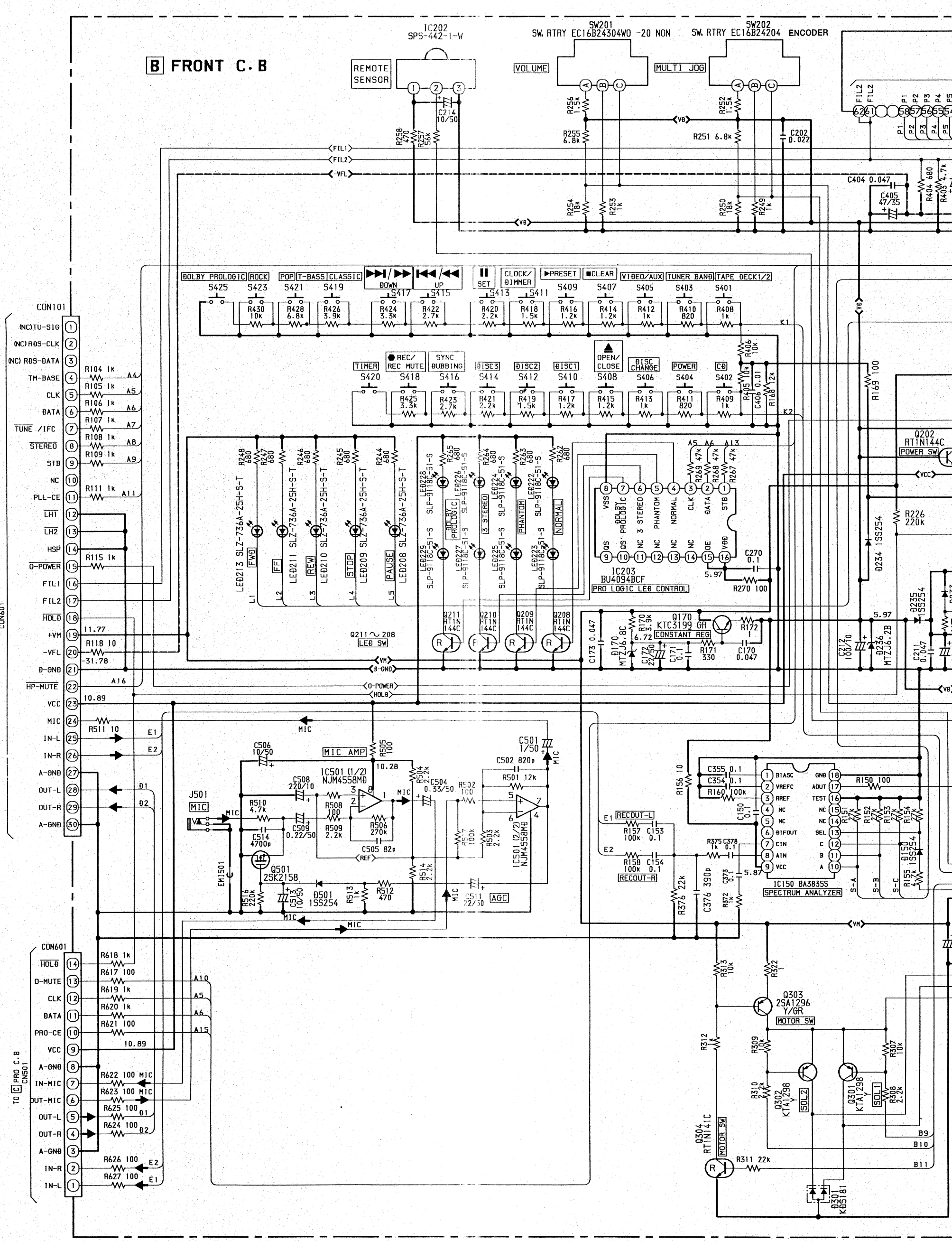
A B C D E F G H I J

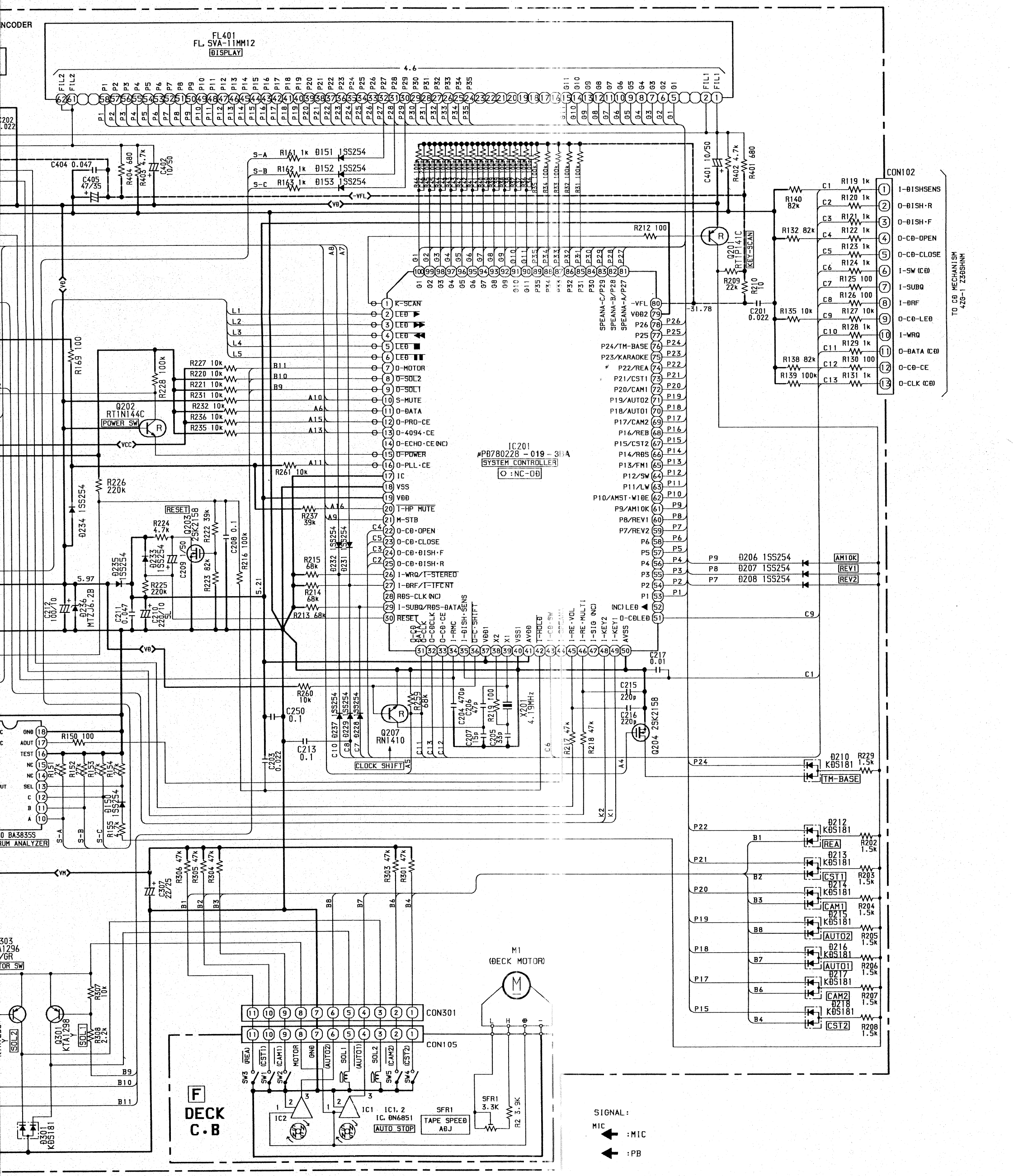
A MAIN C.B



B FRONT C.B

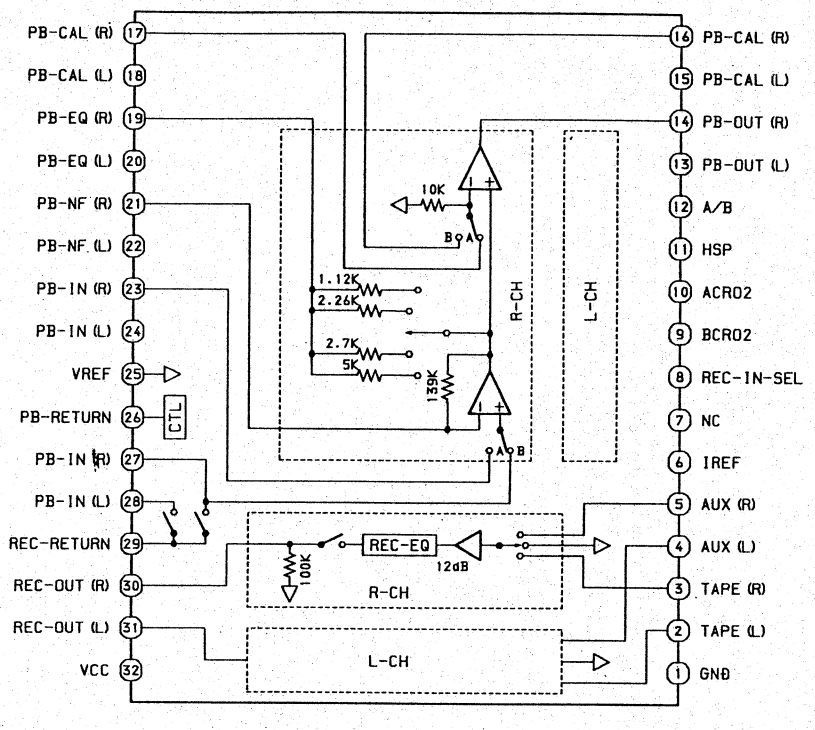

SW201 VOLUME
S425 ĐOLBY PRO LOGIC
S402 CĐ
S405 VIĐEO/AUX
FL401 (ĐISPLAY)
S403 TUNER BANĐ
S401 TAPE ĐECK 1/2
IC202 (REMOTE SENSOR)
LEĐ227, 226 3 STEREO
LEĐ225, 224 PHANTOM
LEĐ223, 222 NORMAL
LEĐ228, 229 ĐOLBY PRO LOGIC
S423 ROCK
S421 POP
S419 CLASSIC
T-BASS
GEQ
TO CĐ MECHANISM 4ZG-1 Z3DSHNM
LEĐ211, S417 ĐOWN
LEĐ210, S415 UP
TUNING
TO C PRO C.B CN501
FROM A MAIN C.B CON601
S404 POWER
SW202 MULTI JOG
J501 MIC
FROM F ĐECK C.B CON105
LEĐ208, S413 II SET
S411 CLOCK/ĐIMMER
LEĐ213, S409 ▶ PRESET
S420 TIMER
S418 ● REC/REC MUTE
LEĐ209, S407 ■ CLEAR
S416 SYNC ĐUBBING
S408 ▲OPEN/CLOSE
S406 ĐISC CHANGE
S414 ĐISC 3
S412 ĐISC 2
S410 ĐISC 1
ĐISC
ĐIRECT
PLAY


B FRONT C.B
IC202 SPS-442-1-W
REMOTE SENSOR
SW201 SW. RTRY EC16B24304W0 -20 NON
VOLUME
SW202 SW. RTRY EC16B24204 ENCODER
MULTI JOG
ENCODER
C214 10/50
R258 470
R257 56k
R256 1.5k
R255 6.8k
R254 18k
R253 1k
R252 1.5k
R251 6.8k
R250 18k
R249 1k
C202 0.022
C404 0.047
C405 47/35
R404 680
R403 4.7k
FIL1
FIL2
-VFL
VB
DOLBY PROLOGIC
ROCK
POP
T-BASS
CLASSIC
BDOWN
UP
SET
CLOCK/ DIMMER
PRESET
CLEAR
VIDEO/AUX
TUNER BAND
TAPE DECK1/2
S425
S423
S421
S419
S417
S415
S413
S411
S409
S407
S405
S403
S401
R430 10k
R428 6.8k
R426 3.9k
R424 3.3k
R422 2.7k
R420 2.2k
R418 1.5k
R416 1.2k
R414 1.2k
R412 1k
R410 820
R408 1k
K1
TIMER
REC/ REC MUTE
SYNC DUBBING
DISC3
DISC2
DISC1
OPEN/ CLOSE
DISC CHANGE
POWER
CD
S420
S418
S416
S414
S412
S410
S408
S406
S404
S402
R425 3.3k
R423 2.7k
R421 2.2k
R419 1.5k
R417 1.2k
R415 1.2k
R413 1k
R411 820
R409 1k
R406 10k
R405 10k
C406 0.01
R168 12k
K2
R169 100
Q202 RT1N144C
POWER SW
VCC
R226 220k
D234 1SS254
LED213 SLZ-736A-25H-S-T
FWD
FF
LED211 SLZ-736A-25H-S-T
REW
LED210 SLZ-736A-25H-S-T
STOP
LED209 SLZ-736A-25H-S-T
PAUSE
LED208 SLZ-736A-25H-S-T
LED228 SLP-9118C-51-S
DOLBY PROLOGIC
LED226 SLP-9118C-51-S
3 STEREO
LED224 SLP-9118C-51-S
PHANTOM
LED222 SLP-9118C-51-S
NORMAL
LED229 SLP-9118C-51-S
LED227 SLP-9118C-51-S
LED225 SLP-9118C-51-S
LED223 SLP-9118C-51-S
R248 680
R247 680
R246 680
R245 680
R244 680
R265 680
R264 680
R263 680
R262 680
A5 A6 A13
R269 47k
R268 47k
R267 47k
VSS
DOLBY PROLOGIC
3 STEREO
PHANTOM
NORMAL
CLK
DATA
STB
QS
QS'
NC
OE
VDD
C270 0.1
5.97
R270 100
IC203 BU4094BCF
PRO LOGIC LED CONTROL
Q211 ~ 208
LED SW
Q211 RT1N144C
Q210 RT1N144C
Q209 RT1N144C
Q208 RT1N144C
Q170 KTC3199 GR
CONSTANT REG
R170 3.9k
6.72
R172 1
R171 330
C170 0.047
C173 0.047
D170 MTZJ6.8C
C172 22/50
C171 0.1
C212 100/10
D236 MTZJ6.2B
D235 1SS254
C211 0.047
CON101
(NC)TU-SIG
(NC) RDS-CLK
(NC) RDS-DATA
TM-BASE
CLK
DATA
TUNE /IFC
STEREO
STB
NC
PLL-CE
LHT
LH2
HSP
O-POWER
FIL1
FIL2
HOLD
+VM
-VFL
D-GND
HP-MUTE
VCC
MIC
IN-L
IN-R
A-GND
OUT-L
OUT-R
A-GND
R104 1k
R105 1k
R106 1k
R107 1k
R108 1k
R109 1k
R111 1k
R115 1k
R118 10
R511 10
11.77
-31.78
10.89
A4
A5
A6
A7
A8
A9
A11
A16
E1
E2
D1
D2
FROM A MAIN C.B
CON601
VM
D-GND
O-POWER
HOLD
MIC
MIC AMP
C506 10/50
C508 220/10
C509 0.22/50
C514 4700p
C504 0.33/50
C505 82p
C501 1/50
C502 820p
R501 12k
R502 100
R503 2.2k
R504 2.2k
R505 100
R506 270k
R508 100
R509 2.2k
R510 4.7k
R512 470
R513 1k
R514 2.2k
R516 220k
10.28
IC501 (1/2) NJM4558MD
IC501 (2/2) NJM4558MD
J501
MIC
EM1501
Q501 2SK2158
D501 1SS254
C513 10/50
AGC
REF
C355 0.1
C354 0.1
R160 100k
C150 0.1
R156 10
R150 100
BIASC
VREFC
RREF
NC
BIFOUT
CIN
AIN
VCC
GND
AOUT
TEST
SEL
C
B
A
R151 47k
R152 27k
R153 27k
R154 27k
S-A
S-B
S-C
D150 1SS254
R155 4.7k
IC150 BA3835S
SPECTRUM ANALYZER
RECOUT-L
RECOUT-R
R157 100k
R158 100k
C153 0.1
C154 0.1
R375 1k
C378 0.1
5.87
R376 22k
C376 390p
C373 0.1
R372 1k
CON601
HOLD
D-MUTE
CLK
DATA
PRO-CE
VCC
A-GND
IN-MIC
OUT-MIC
OUT-L
OUT-R
A-GND
IN-R
IN-L
R618 1k
R617 100
R619 1k
R620 1k
R621 100
R622 100 MIC
R623 100 MIC
R625 100
R624 100
R626 100
R627 100
A10
A5
A6
A15
TO C PRO C.B
CN501
R313 10k
R322 1
Q303 2SA1296 Y/GR
MOTOR SW
R312 1k
R309 10k
R307 10k
R310 2.2k
Q302 KTA1298 Y
SOL2
Q301 KTA1298 Y
SOL1
R308 2.2k
Q304 RT1N141C
R311 22k
D301 KDS181
B9
B10
B11

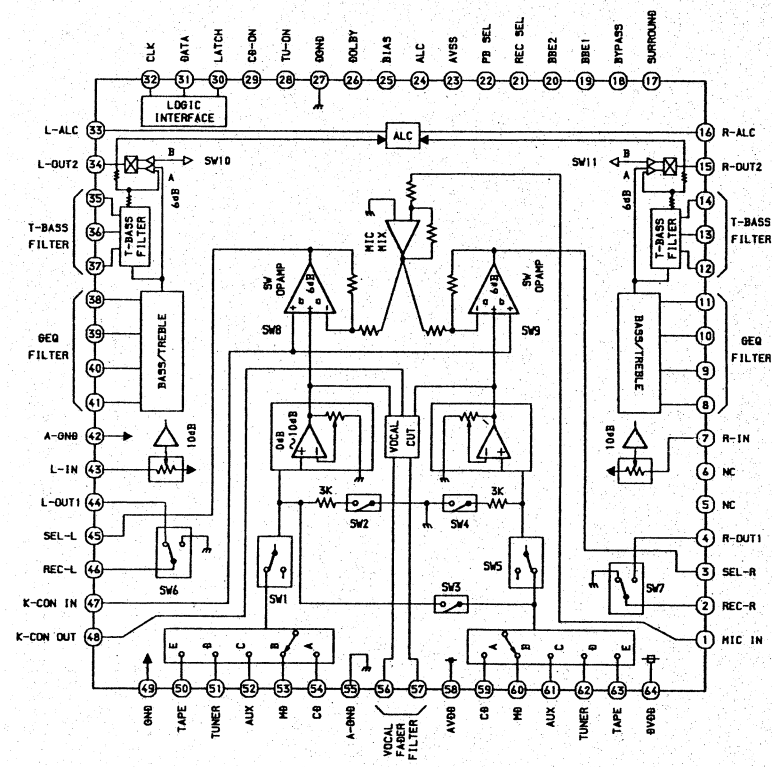

FL401
FL SVA-11MM12
DISPLAY
CON102
TO CD MECHANISM
420-1 Z39SHNM
IC201
μPD780228 - 019 - 3BA
SYSTEM CONTROLLER
O :NC-OD
Q202
RT1N144C
POWER SW
Q201
RT1P141C
KEY-SCAN
Q203
2SK2158
RESET
Q204 2SK2158
Q207
RN1410
CLOCK SHIFT
X201
4.19MHz
Q301
KTA1298
Y
D301
KDS181
M1
(DECK MOTOR)
CON301
CON105
F
DECK
C.B
IC1 IC1, 2
IC, DN6851
AUTO STOP
SFR1
TAPE SPEED
ADJ
SIGNAL:
MIC
:MIC
:PB
AM10K
REV1
REV2
REA
CST1
CAM1
AUTO2
AUTO1
CAM2
CST2
TM-BASE
K-SCAN
LED
O-MOTOR
O-SOL2
O-SOL1
S-MUTE
O-DATA
O-PRO-CE
O-4094-CE
O-ECHO-CE (NC)
O-POWER
O-PLL-CE
I-HP MUTE
M-STB
O-CD-OPEN
O-CD-CLOSE
O-CD-DISH-F
O-CD-DISH-R
I-WRQ/I-STEREO
I-DRF/I-TFCNT
RDS-CLK (NC)
I-SUBQ/RDS-DATA
RESET
I-DISHSENS
O-DISH-R
O-DISH-F
O-CD-OPEN
O-CD-CLOSE
I-SW (CD)
I-SUBQ
I-DRF
O-CD-LED
I-WRQ
O-DATA (CD)
O-CD-CE
O-CLK (CD)

IC BLOCK DIAGRAM – 1

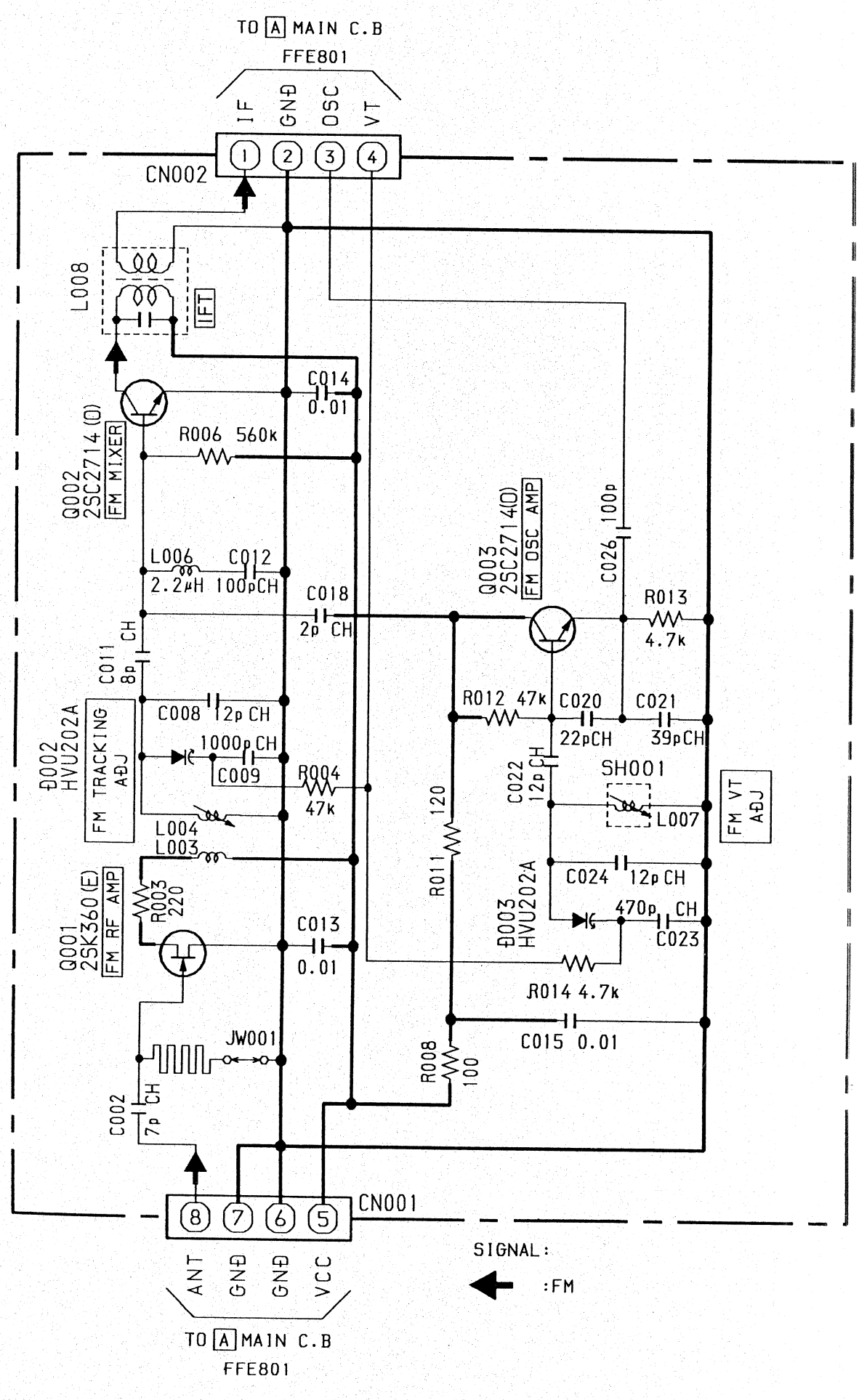
IC, BAT162AFS



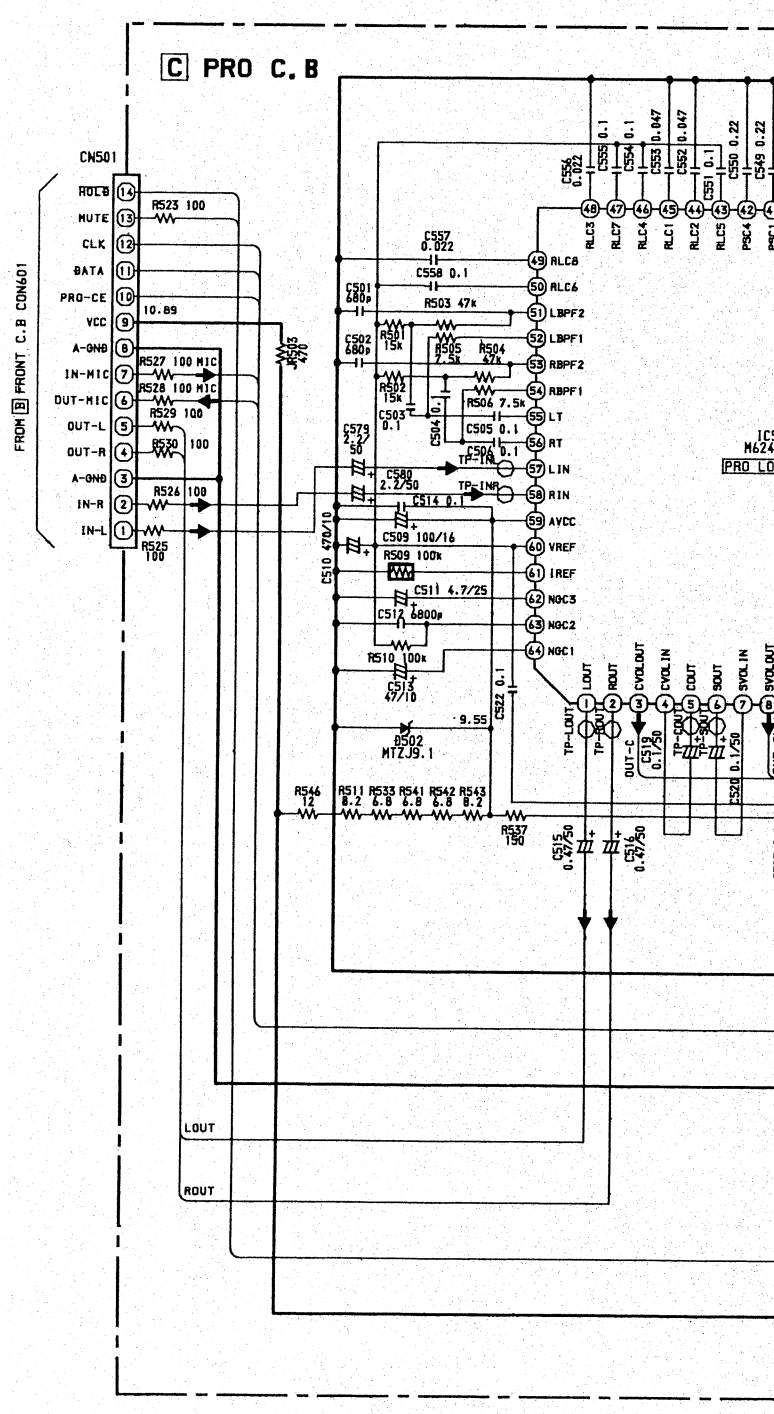
IC, M62445FP-601

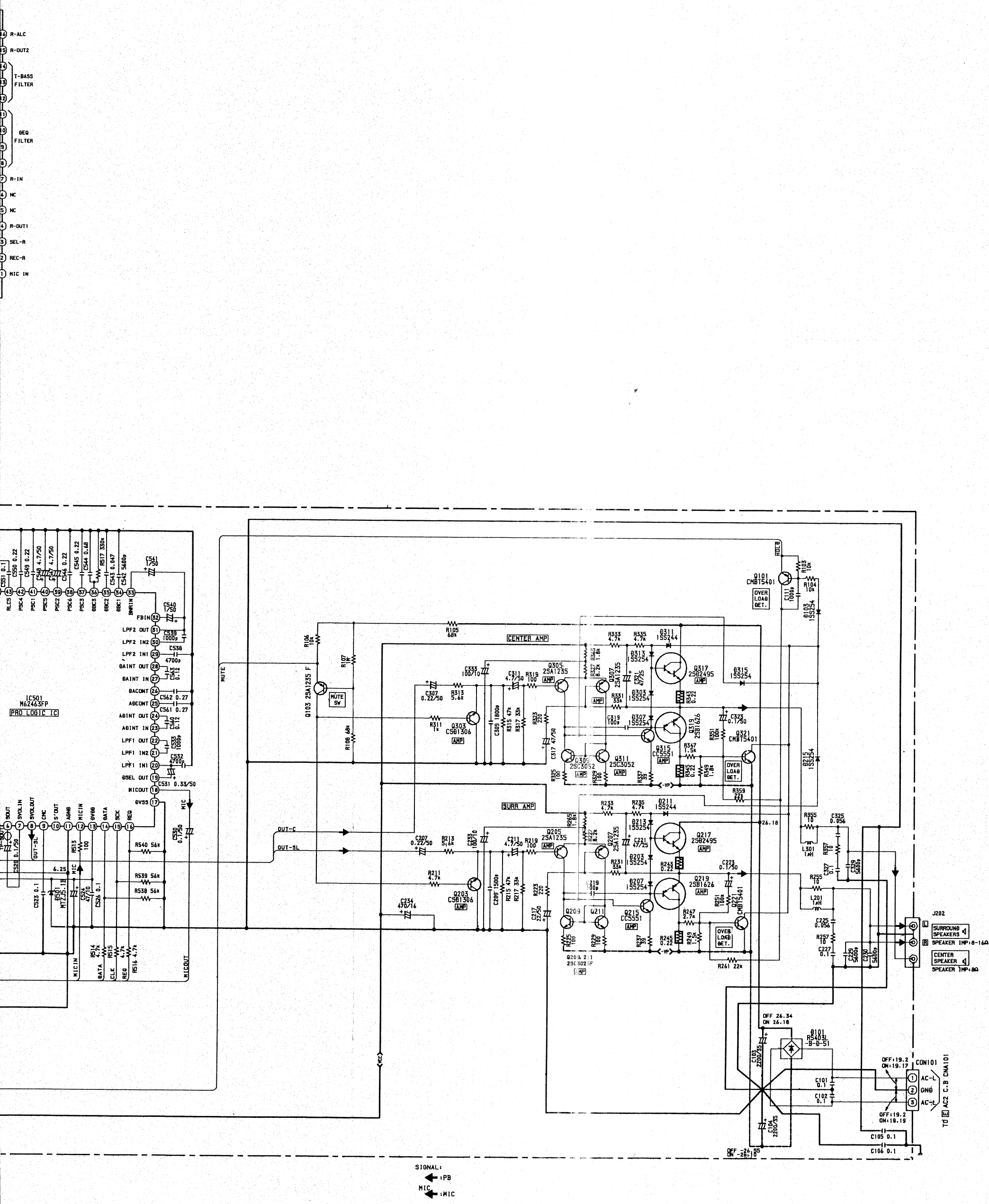


SCHEMATIC DIAGRAM – 3 (TUNER END FRONT)



SCHEMATIC DIAGRAM – 4 (PRO)

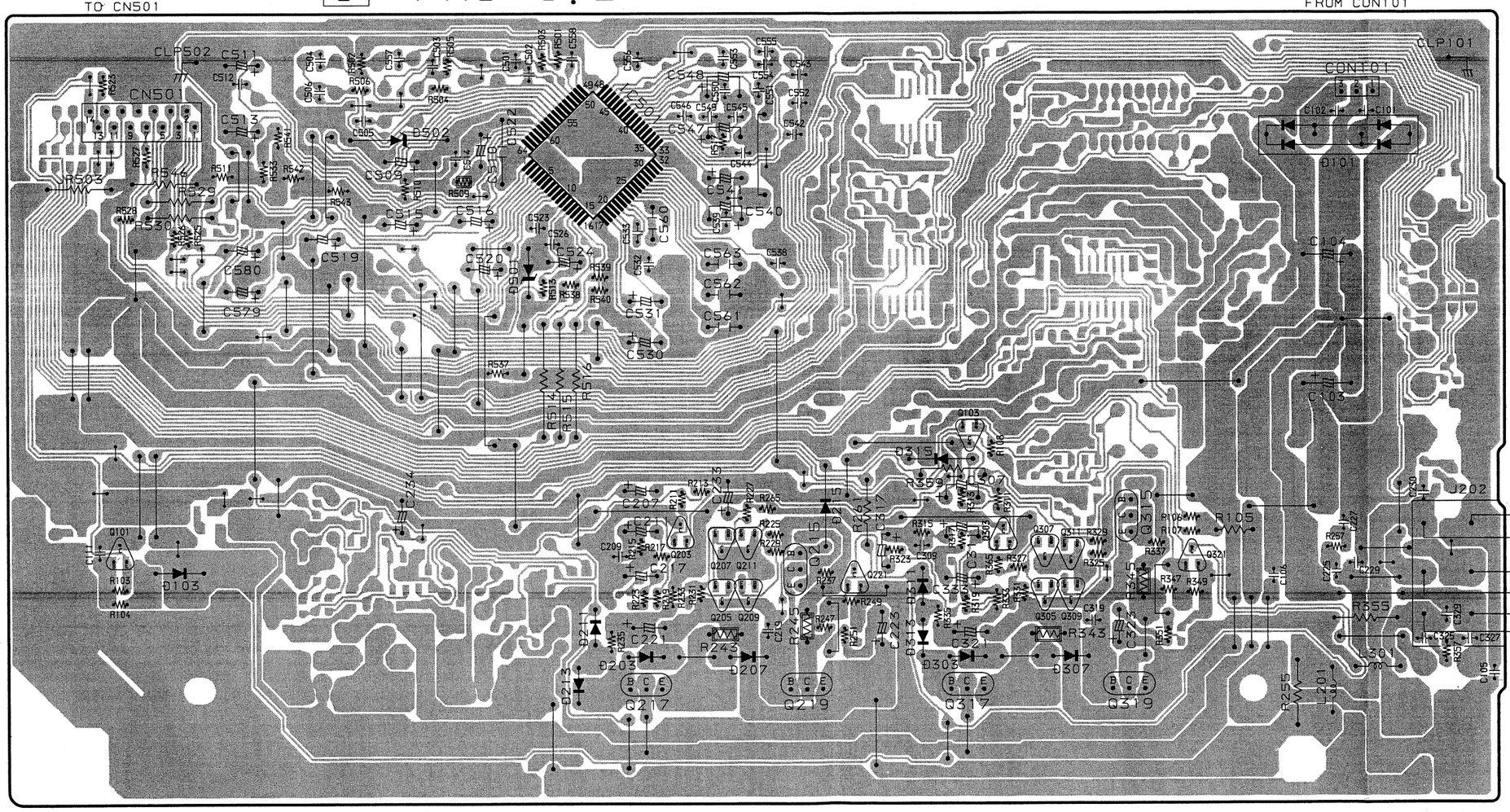



IC501
M62463FP
PRO LOGIC IC
CENTER AMP
SURR AMP
MUTE
MUTE SW
OVER LOAD DET.
SURROUND SPEAKERS
SPEAKER IMP:8-16Ω
CENTER SPEAKER
SPEAKER IMP:8Ω
J202
CON101
AC-L
GND
AC-L
T-BASS FILTER
GEQ FILTER
SIGNAL:
:PB
MIC
:MIC

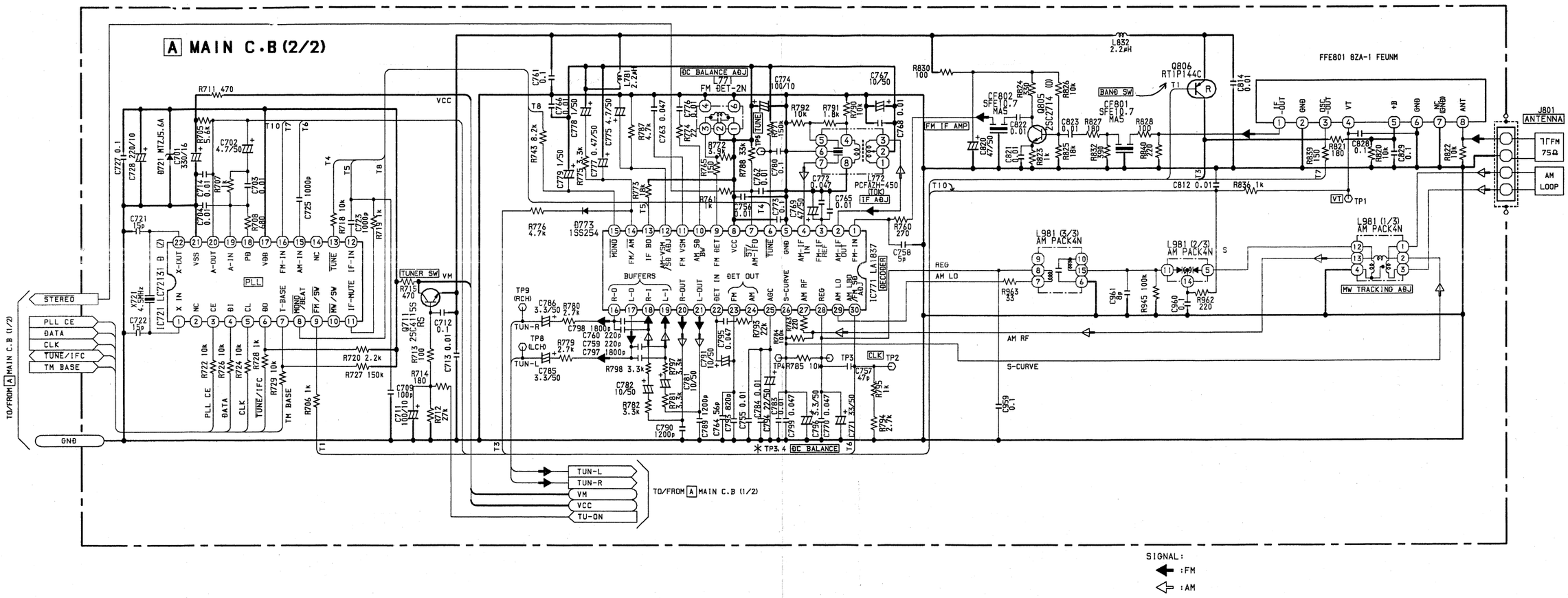
C PRO C.B

FROM B FRONT C.B
CON601
14 13 11 9 7 5 3 1
TO CN501

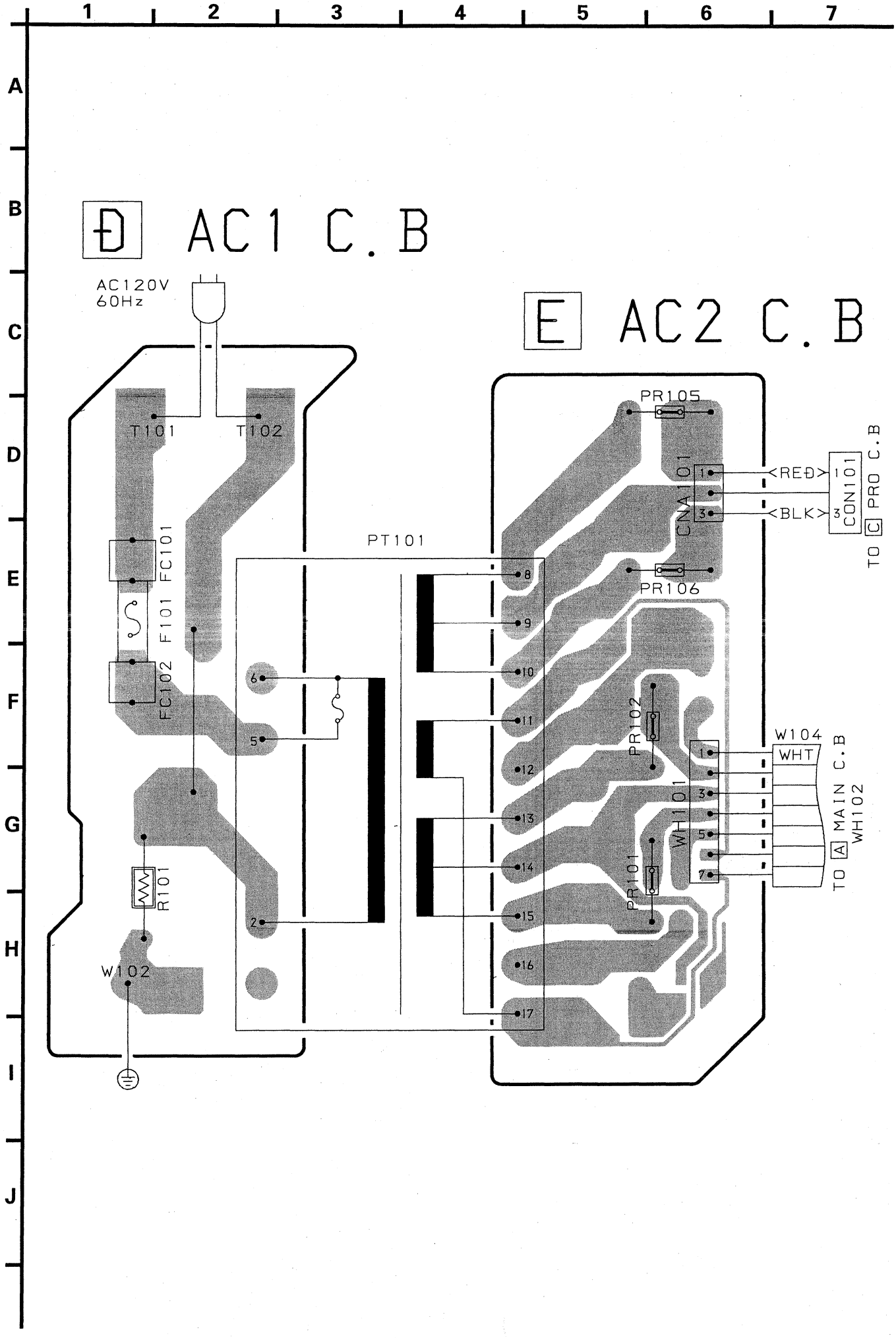
TO E AC2 C.B CNA101
CON101
3 2 1
FROM CON101

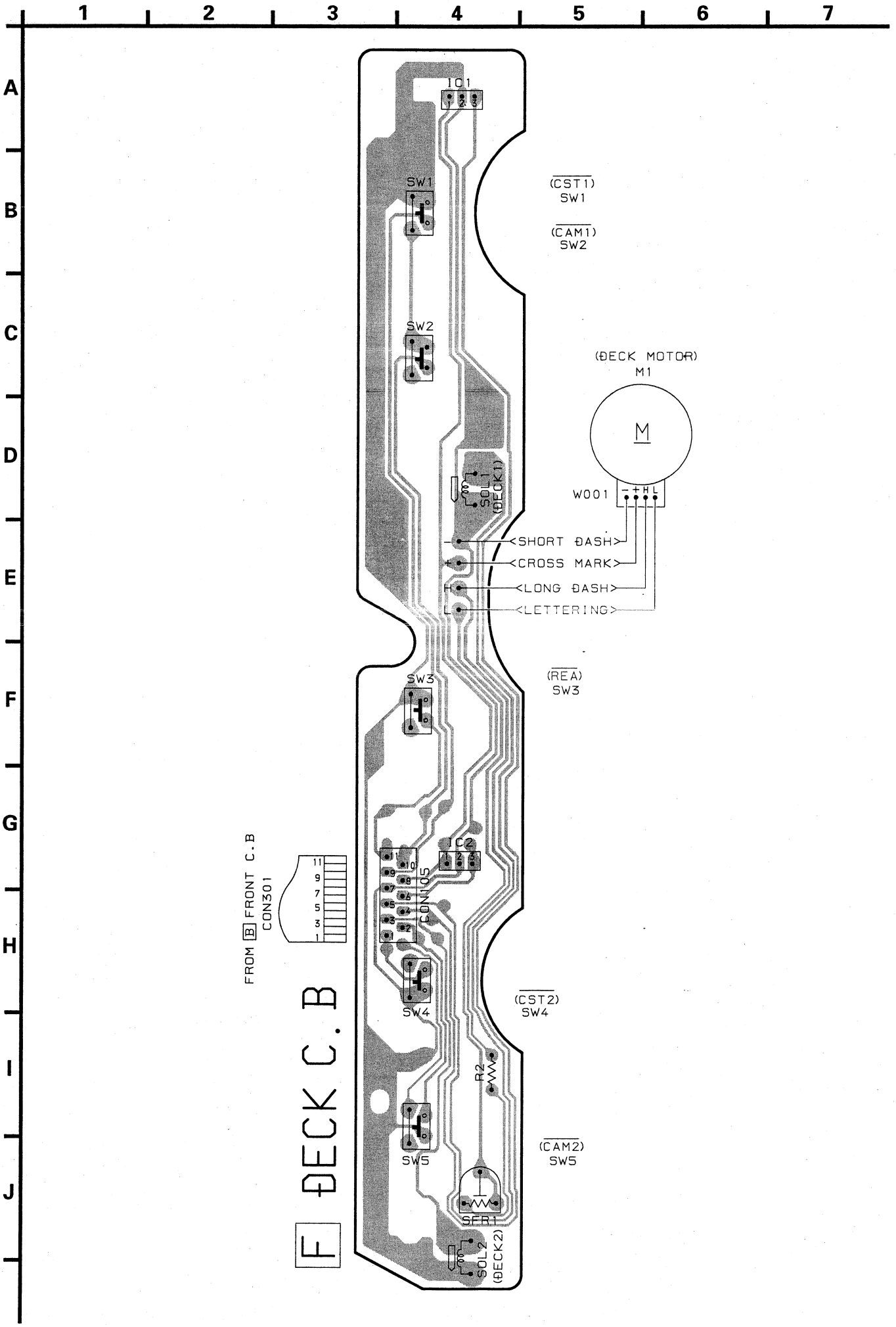


SCHEMATIC DIAGRAM – 5 (MAIN 2 / 2)



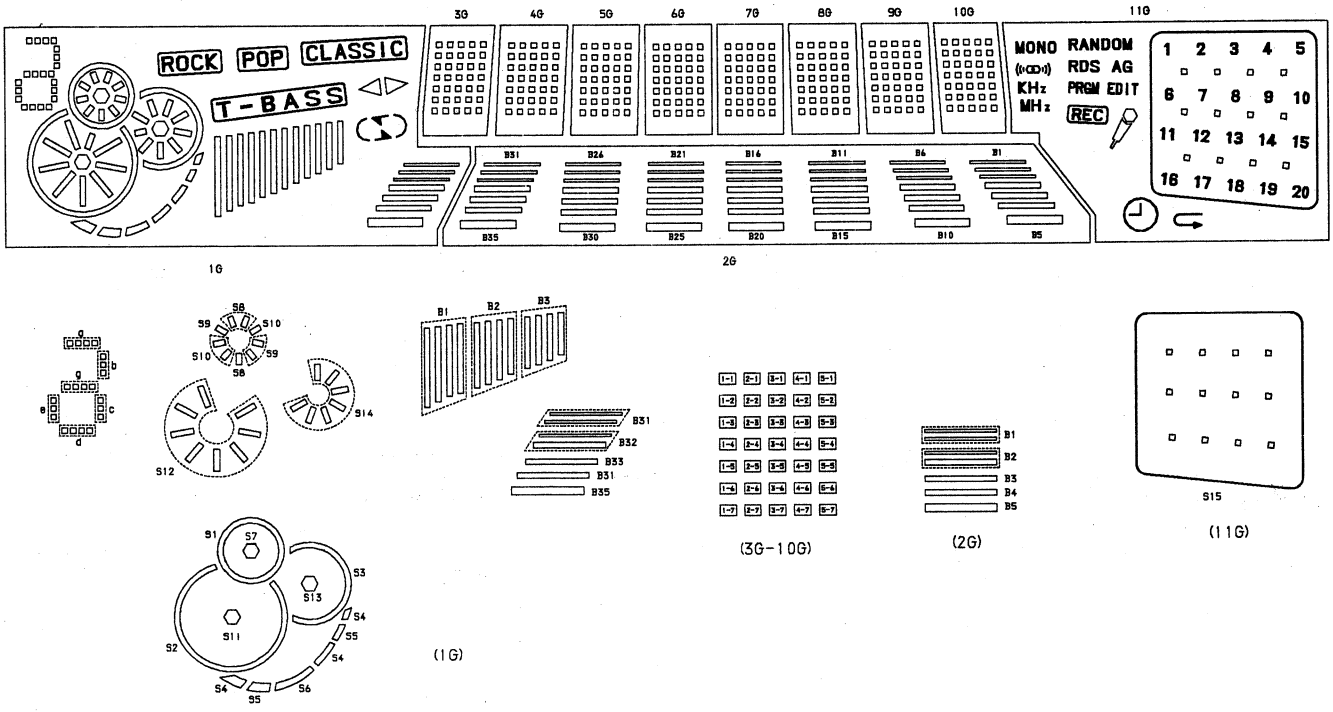
SIGNAL:
:FM
:AM


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
D AC1 C.B
AC120V
60Hz
T101
T102
FC101
F101
FC102
R101
W102
E AC2 C.B
PT101
PR105
PR106
PR102
PR101
CNA101
<RED>
<BLK>
CON101
TO C PRO C.B
W104
WHT
WH101
TO A MAIN C.B
WH102


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
IC1
SW1
(CST1)
SW1
(CAM1)
SW2
SW2
(DECK MOTOR)
M1
M
SOL1
(DECK1)
W001
H
L
<SHORT DASH>
<CROSS MARK>
<LONG DASH>
<LETTERING>
SW3
(REA)
SW3
FROM B FRONT C.B
CON301
CON105
IC2
SW4
(CST2)
SW4
R2
SW5
(CAM2)
SW5
SFR1
SOL2
(DECK2)
F DECK C.B

FL GRID ASSIGNMENT AND ANODE CONNECTION

GRID ASSIGNMENT



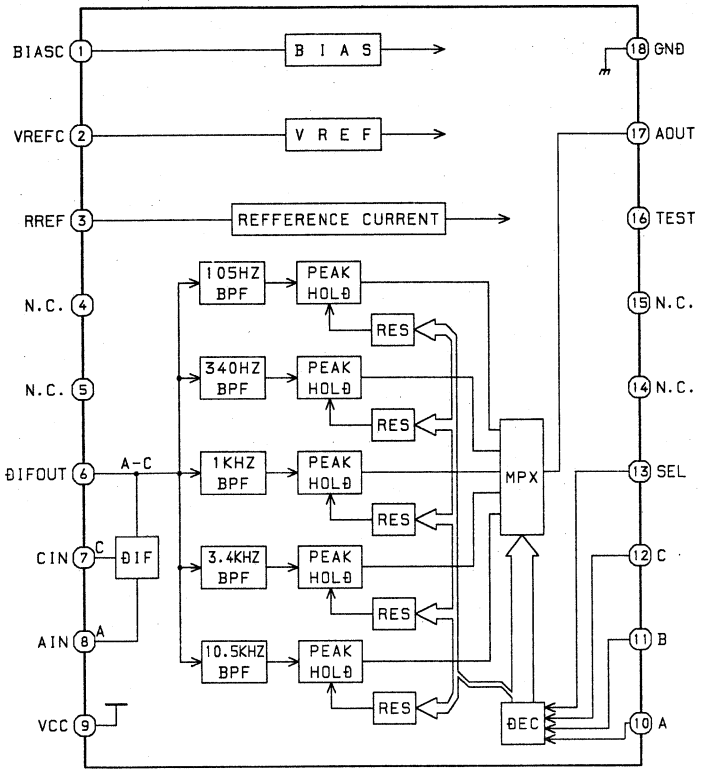
ANODE CONNECTION

	1G	2G	3G-10G	11G
P1	a, g, d	B35	1-1	MONO
P2	b	B30	2-1	((∞))
P3	c	B25	3-1	KHz
P4	e	B20	4-1	MHz
P5	S1	B15	5-1	
P6	S7	B10	1-2	RANDOM
P7	S8	B5	2-2	
P8	S9	B34	3-2	
P9	S10	B29	4-2	
P10	S2	B24	5-2	EDIT
P11	S11	B19	1-3	REC
P12	S12	B14	2-3	
P13	S3	B9	3-3	
P14	S13	B4	4-3	
P15	S14	B33	5-3	S15
P16	S4	B28	1-4	20
P17	S5	B23	2-4	19
P18	S6	B18	3-4	18

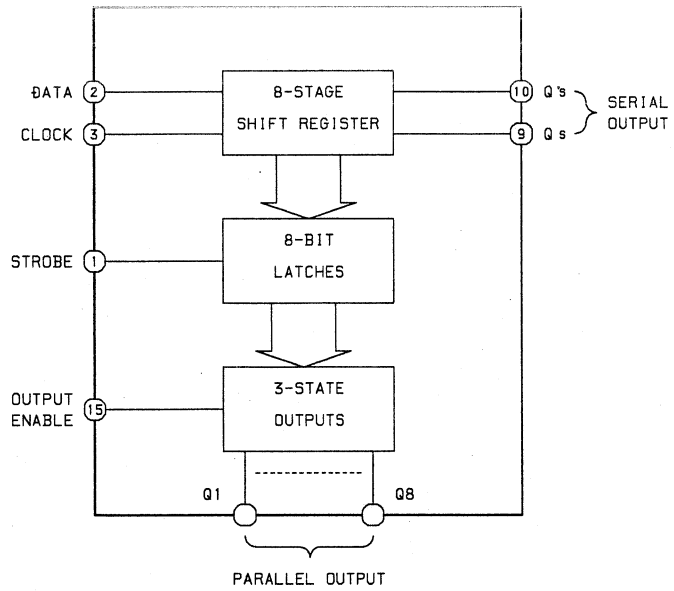
	1G	2G	3G-10G	11G
P19	ROCK	B13	4-4	17
P20	POP	B8	5-4	16
P21	CLASSIC	B3	1-5	15
P22	▷	B32	2-5	14
P23	◁	B27	3-5	13
P24	)	B22	4-5	12
P25	▼	B17	5-5	11
P26	(	B12	1-6	10
P27	T-BASS	B7	2-6	9
P28	B1	B2	3-6	8
P29	B2	B31	4-6	7
P30	B3	B26	5-6	6
P31	B31	B21	1-7	5
P32	B32	B16	2-7	4
P33	B33	B11	3-7	3
P34	B34	B6	4-7	2
P35	B35	B1	5-7	1

IC BLOCK DIAGRAM – 2

IC, BA3835S



IC, BU4094BCF



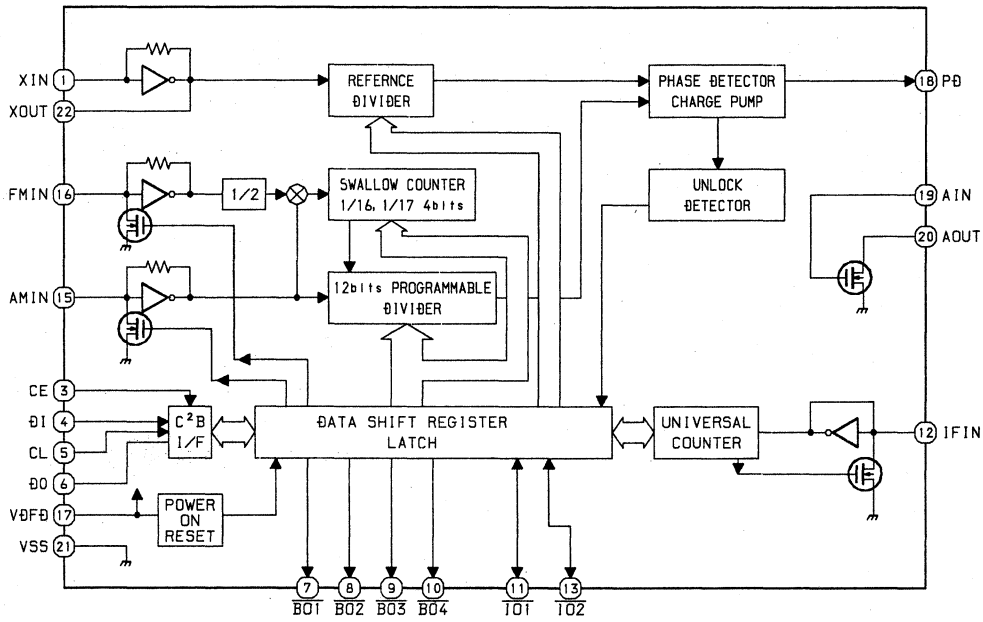
TRUTH TABLE

CLOCK	OUTPUT ENABLE	STROBE	DATA	PARALLEL OUTPUTS		SERIAL OUTPUTS	
				Q1	Qn	Qs	Q's
↑	L	X	X	Z	Z	Q7	NO Chg.
↓	L	X	X	Z	Z	No Chg.	Qs
↑	H	L	X	No Chg.	No Chg.	Q7	No Chg.
↑	H	H	L	L	Qn-1	Q7	No Chg.
↑	H	H	H	H	Qn-1	Q7	No Chg.
↓	H	X	X	No Chg.	No Chg.	No Chg.	Qs

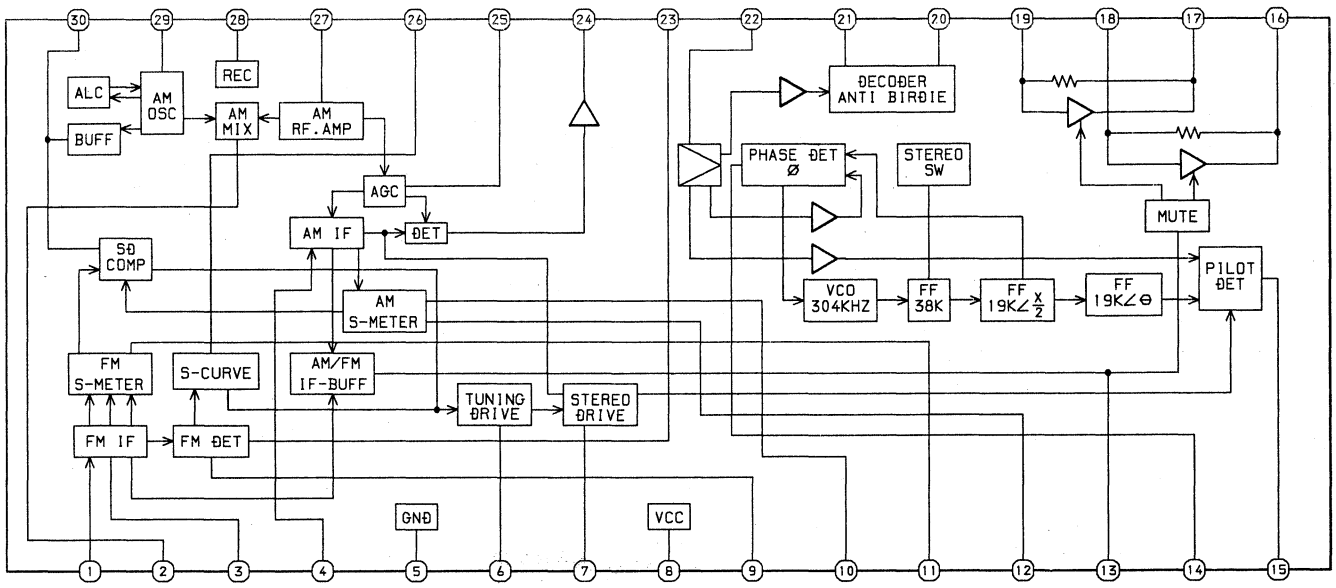
Z=High Impedance

X=Don't Care

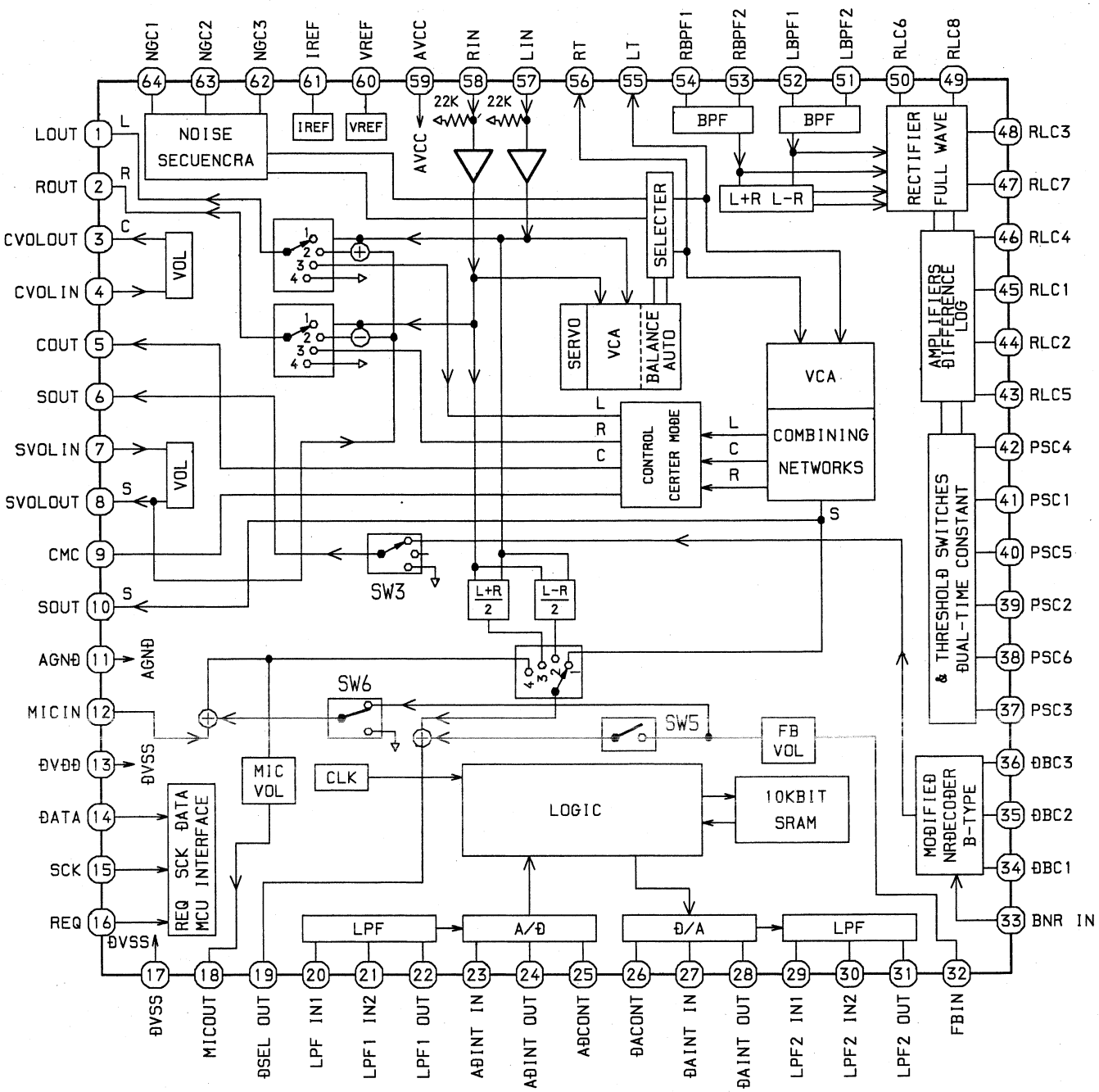
IC, LC72131D



IC, LA1837



IC, M62463FP


NGC1
NGC2
NGC3
IREF
VREF
AVCC
RIN
LIN
RT
LT
RBPF1
RBPF2
LBPF1
LBPF2
RLC6
RLC8
LOUT
ROUT
CVOLOUT
CVOLIN
COUT
SOUT
SVOLIN
SVOLOUT
CMC
SOUT
AGNÐ
MICIN
ÐVÐÐ
ÐATA
SCK
REQ
ÐVSS
NOISE SECUENCRA
22K
22K
BPF
BPF
RECTIFIER FULL WAVE
L+R L-R
SELECTER
VOL
SERVO
VCA
BALANCE AUTO
VCA
COMBINING NETWORKS
CONTROL CERTER MODE
AMPLIFIERS DIFFERENCE LOG
& THRESHOLÐ SWITCHES ÐUAL-TIME CONSTANT
SW3
SW6
SW5
FB VOL
MIC VOL
CLK
LOGIC
10KBIT SRAM
MOÐIFIEÐ NRÐECOÐER B-TYPE
REQ SCK ÐATA MCU INTERFACE
LPF
A/Ð
Ð/A
LPF
RLC3
RLC7
RLC4
RLC1
RLC2
RLC5
PSC4
PSC1
PSC5
PSC2
PSC6
PSC3
ÐBC3
ÐBC2
ÐBC1
BNR IN
ÐVSS
MICOUT
ÐSEL OUT
LPF IN1
LPF1 IN2
LPF1 OUT
AÐINT IN
AÐINT OUT
AÐCONT
ÐACONT
ÐAINT IN
ÐAINT OUT
LPF2 IN1
LPF2 IN2
LPF2 OUT
FBIN

IC DESCRIPTION

IC, μPD780228

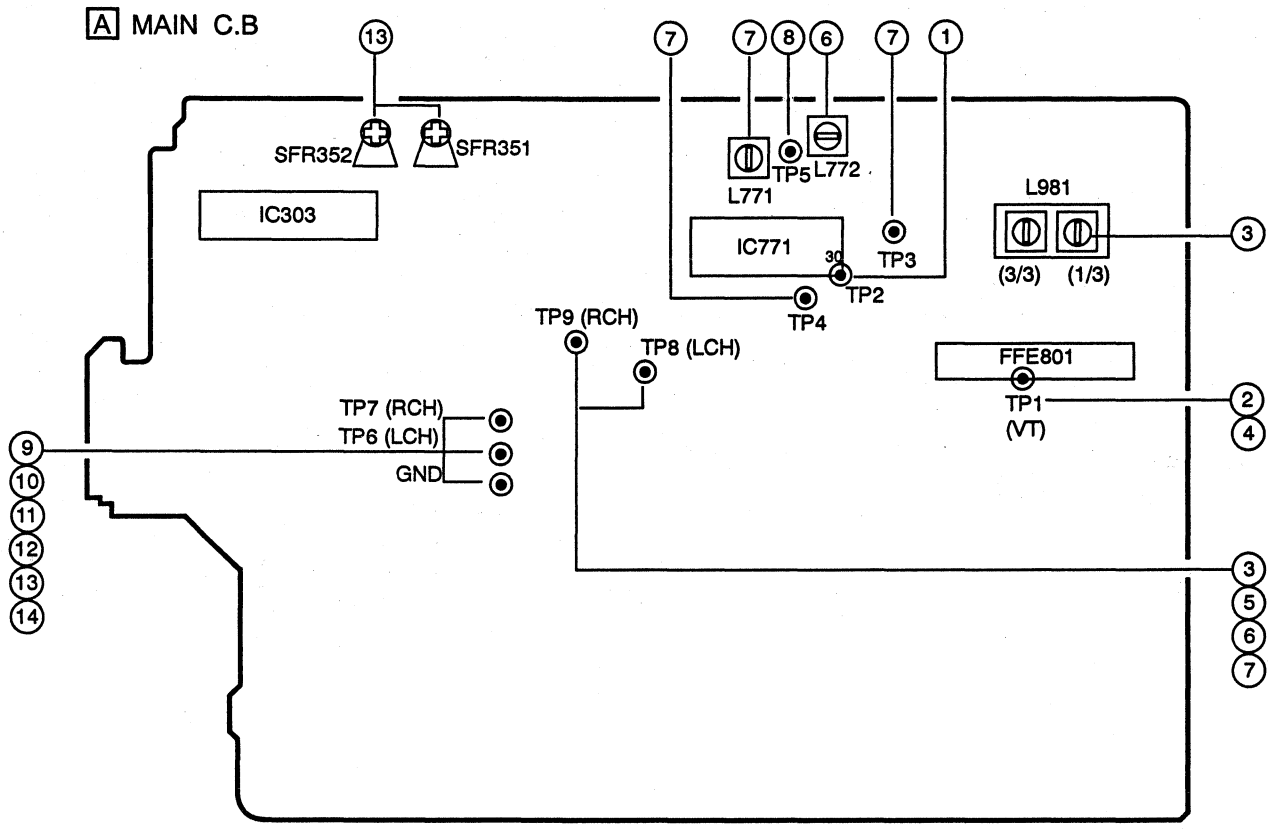
Pin No.	Pin Name	I/O	Description
1	K-SCAN	O	Key scan output.
2	LED ▶	O	▶ LED ON/OFF output.
3	LED ▶▶	O	▶▶ LED ON/OFF output.
4	LED ◀◀	O	◀◀ LED ON/OFF output.
5	LED ■	O	■ LED ON/OFF output.
6	LED ❚❚	O	❚❚ LED ON/OFF output.
7	O-MOTOR	O	DECK MOTOR ON/OFF output.
8	O-SOL2	O	DECK 2 solenoid output.
9	O-SOL1	O	DECK 1 solenoid output.
10	S-MUTE	O	Surround mute output.
11	O-DATA	O	Data output for MAIN,FRONT,PRO C.B.
12	O-PRO-CE	O	Prologic IC chip enable output.
13	O-4094.CE	O	Latch strobe output to shift register IC.
14	O-ECHO.CE (N.C)	–	Not connected.
15	O-POWER	O	System power supply ON/OFF output.
16	O-PLL.CE	O	PLL IC chip enable output.
17	IC	–	Internal connection.(Connected to GND.)
18	VSS	–	GND.
19	VDD	–	Power supply input.
20	I-HP MUTE	I	"L" input prologic DSP off.
21	M-STB	O	Latch strobe output for MAIN C.B.
22	O-CD.OPEN	O	CD tray open data output.
23	O-CD.CLOSE	O	CD tray close data output.
24	O-CD.DISH.F	O	CD turntable forward rotation output.
25	O-CD.DISH.R	O	CD turntable reverse rotation output.
26	I-WRQ/I-STEREO	I	CD WRQ input/Tuner stereo input.
27	I-DRF/I-IFCNT	I	CD DRF input/Tune IF count serial data input.
28	RDS CLK (N.C)	I	Tuner RDS clock input.(Not connected.)
29	I-SUBQ/RDS-DATA	I	CD SUBQ data input/RDS data input.
30	RESET	I	System reset.
31	O-CD DATA/O-CLK	O	CD data output/Main PLL shift register clock output.
32	O-CDCLK	O	CD clock output.
33	O-CD.CE	O	CD enable output.
34	I-RMC	I	System remote control input.
35	I.DISH.SENSE	I	CD turntable photo sensor input.
36	O-C.SHIFT	O	Micon clock shift output.
37	VDD1	–	Power supply input.
38,39	X2,X1	–	4.19MHz oscillator circuit.
40	VSS1	–	GND.
41	AVDD	–	Power supply input.
42	I-HOLD	I	Power failure detected input "L" to stop clock and main memory. "H" for normal operation.
43	I-CD.SW	I	CD mecha switch input.

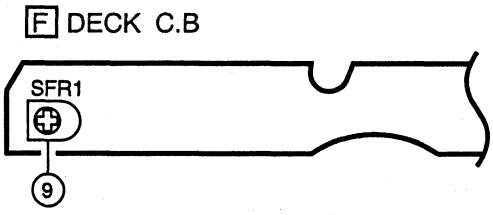
Pin No.	Pin Name	I/O	Description
44	I-SPEANA	I	A/D input for spectrum analyser display.
45	I-RE.VOL	I	Volume jog AD input.
46	I-RE.MULTI	I	Multi jog AD input.
47	I-SIG (N.C)	I	RDS Tuner signal input. (Not connected.)
48,49	I-KEY2,1	I	Key2,1 input.
50	AVSS	–	GND.
51	O-CDLED	O	CD flash window LED ON/OFF output.
52	LED ◄	O	◄ LED switch ON/OFF output.
53~58	P1~P6	O	FL segment P1~6 output.
59	P7/REV2	I/O	FL segment P7 output / REV2 data input.
60	P8/REV1	I/O	FL segment P8 output / REV1 data input.
61	P9/AM10K	I/O	FL segment P9 output / AM10K data input.
62	P10/AMST.WIDE	I/O	FL segment P10 output / AMSTWIDE data input.
63	P11/LW	I/O	FL segment P11 output / LW mode data input.
64	P12/SW	I/O	FL segment P12 output / SW mode data input.
65	P13/FM1	I/O	FL segment P13 output / FM1 data input.
66	P14/RDS	I/O	FL segment P14 output / RDS data input.
67	P15/CST2	I/O	FL segment P15 output / DECK2 cassette detect switch data input.
68	P16/REB	I/O	FL segment P16 output / DECK2 side B record OK switch data input.
69	P17/CAM2	I/O	FL segment P17 output / DECK2 CAM switch data input.
70	P18/AUTO1	I/O	FL segment P18 output / DECK1 AUTO stop switch data input.
71	P19/AUTO2	I/O	FL segment P19 output / DECK2 AUTO stop switch data input.
72	P20/CAM1	I/O	FL segment P20 output / DECK1 CAM stop switch data input.
73	P21/CST1	I/O	FL segment P21 output / DECK1 cassette detect switch data input.
74	P22/REA	I/O	FL segment P22 output / DECK2 side A record OK switch data input.
75	P23/KARAOKE	I/O	FL segment P23 output / KARAOKE data input.
76	P24/TM-BASE	I/O	FL segment P24 output / TM-BASE data input.
77,78	P25,P26	O	FL segment P25,P26 output.
79	VDD2	–	Power supply input.
80	–VFL	–	Power supply for FL display.
81	SPEANA-A/P27	O	FL segment P27 output / Spectrum analyser band switching data output.
82	SPEANA-B/P28	O	FL segment P28 output / Spectrum analyser band switching data output.
83	SPEANA-C/P29	O	FL segment P29 output / Spectrum analyser band switching data output.
84~89	P30~P35	O	FL segment P30~35 output.
90~100	G11~G1	O	FL grid G11~1 output.

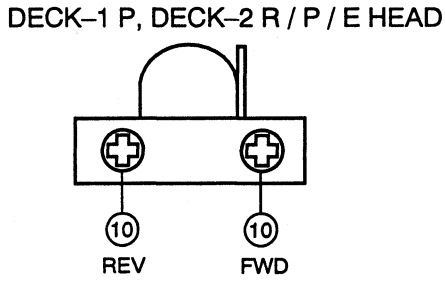
IC, LC72131

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>1</td><td>XIN</td><td rowspan="2">I/O</td><td rowspan="2">A crystal oscillator (4.5MHz) is connected between these pins.</td></tr>
<tr><td>22</td><td>XOUT</td></tr>
<tr><td>2</td><td>NC</td><td>–</td><td>Not used.</td></tr>
<tr><td>3</td><td>CE</td><td>I</td><td>To enable the IC. Active "H".</td></tr>
<tr><td>4</td><td>DI</td><td>I</td><td>Digital data input from CPU (μPD780228) when relevant key is operated.
Active "H".</td></tr>
<tr><td>5</td><td>CL</td><td>I</td><td>To clock in the data DI.</td></tr>
<tr><td>6</td><td>DO</td><td>O</td><td>Digital data output to CPU (μPD780228).</td></tr>
<tr><td>7</td><td>T-BASE</td><td>O</td><td>Outputs a reference clock signal (8Hz) for the clock.</td></tr>
<tr><td>8</td><td>$\overline{\text{MONO}}$ / BEAT</td><td>O</td><td>Outputs "H" when MONO / BEAT is switched.</td></tr>
<tr><td>9</td><td>$\overline{\text{FM}}$ / $\overline{\text{SW}}$</td><td>O</td><td>Output "L" or "H" as follows:
<table>
<tr><th colspan="2">2 BAND</th><th colspan="3">3 BAND</th><th colspan="3">3 BAND</th></tr>
<tr><th>AM</th><th>FM</th><th>LW</th><th>MW</th><th>FM</th><th>MW</th><th>SW</th><th>FM</th></tr>
<tr><td>H</td><td>L</td><td>H</td><td>H</td><td>L</td><td>H</td><td>L</td><td>L</td></tr>
</table></td></tr>
<tr><td>10</td><td>$\overline{\text{MW}}$/SW</td><td>O</td><td>Outputs "L" or "H" as follows:
<table>
<tr><th colspan="2">2 BAND</th><th colspan="3">3 BAND</th><th colspan="3">3 BAND</th></tr>
<tr><th>AM</th><th>FM</th><th>LW</th><th>MW</th><th>FM</th><th>MW</th><th>SW</th><th>FM</th></tr>
<tr><td>L</td><td>L</td><td>H</td><td>L</td><td>L</td><td>L</td><td>H</td><td>L</td></tr>
</table></td></tr>
<tr><td>11</td><td>IF-MUTE</td><td>O</td><td>To control internal counter.</td></tr>
<tr><td>12</td><td>IF-IN</td><td>I</td><td>General purpose counter input.</td></tr>
<tr><td>13</td><td>$\overline{\text{TUNE}}$</td><td>I</td><td>Receives "L" when station is tuned.</td></tr>
<tr><td>14</td><td>NC</td><td>–</td><td>Not used.</td></tr>
<tr><td>15</td><td>AM-IN</td><td>I</td><td>Receives the AM local oscillator frequency signal.</td></tr>
<tr><td>16</td><td>FM-IN</td><td>I</td><td>Receives the FM local oscillator frequency signal.</td></tr>
<tr><td>17</td><td>VDD</td><td>–</td><td>Supply power to IC (+5V).</td></tr>
<tr><td>18</td><td>PD</td><td>O</td><td>PLL charge pump output.</td></tr>
<tr><td>19</td><td>A-IN</td><td>I</td><td rowspan="2">The MOS transistor for PLL active low pass filter.</td></tr>
<tr><td>20</td><td>A-OUT</td><td>O</td></tr>
<tr><td>21</td><td>VSS</td><td>–</td><td>Ground.</td></tr>
</table>

ADJUSTMENT <TUNER / DECK>







< TUNER SECTION >

1. Clock Frequency Check
   Settings : • Test point : TP2
   Method : Set to AM 1710kHz and check that the test point is 2160kHz ± 45Hz.

2. AM VT Check
   Settings : • Test point : TP1
   Method : Set to AM 1710kHz and AM 530kHz and check that the test point is less than 8.5V(1710kHz) and more than 0.6V(530kHz).

3. AM Tracking Adjustment
   Settings : • Test point : TP8(Lch), TP9(Rch)
   • Adjustment location :
   L981(1/3) 1000kHz
   Method : Set to AM 1000kHz and adjust L981(1/3) so that the test point is max.

4. FM VT Check
   Settings : • Test point : TP1
   Method : Set to FM 108.0MHz and check that the test point is less than 8.0V.
   Set to FM 87.5MHz and check that the test point is more than 0.5V.

5. FM Tracking Check
   Settings : • Test point : TP8(Lch), TP9(Rch)
   Method : Set to FM 98.0MHz and check that the test point is less than 9.0dB.

6. AM IF Adjustment
   Settings : • Test point : TP8(Lch), TP9(Rch)
   • Adjustment location :
   L772 ..... 450kHz

7. DC Balance / Mono Distortion Adjustment
   Settings : • Test point : TP3, TP4 (DC Balance)
   TP8, TP9 (Distortion)
   • Adjustment location : L771
   • Input level : 54dB
   Method : Set to FM 98.0MHz and adjust L771 so that the voltage between TP3 and TP4 becomes 0V ± 0.04V. Next, check that the distortion is less than 1.3%

8. Auto Stop Level Check
   AM
   Settings : • Input level : 52dB
   • Test point : TP5
   Method : Set to AM 1000kHz and check that the auto stop is at 37 ~ 62dB.

   FM
   Settings : • Input level : 25dB
   • Test point : TP5
   Method : Set to FM 98.0MHz and check that the auto stop is at 25dB ± 10dB.

< DECK SECTION >

9. Tape Speed Adjustment
   Settings : • Test tape : TTA–100
   • Test point : TP6(Lch), TP7(Rch)
   • Adjustment location : SFR1
   Method : Play back the test tape and adjust SFR1 so that the frequency counter reads 3000Hz ± 5Hz.

10. Head Azimuth Adjustment
    Settings : • Test tape : TTA–300
    • Test point : TP6(Lch), TP7(Rch)
    • Adjustment location : Head azimuth adjustment screw
    Method : Play back (FWD) the 10kHz signal of the test tape and adjust screw so that the output becomes maximum. Next, perform on REV PLAY mode.

11. PB Frequency Response Check (DECK 1, DECK 2)
    Settings : • Test tape : TTA–300
    • Test point :TP6(Lch), TP7(Rch)
    Method : Play back the 315Hz and 10kHz signals of the test tape and check that the output ratio of the 10kHz signal with respect to that of the 315Hz signal is within 5dB.

12. PB Sensitivity Check (DECK 1, DECK 2)
    Settings : • Test tape : TTA–200
    • Test point : TP6(Lch), TP7(Rch)
    Method : Play back the test tape and check that the output level at TP6,TP7 becomes 120mV± 3.0dB.

13. REC/PB Frequency Response Adjustment
    Settings : • Test tape : TTA–602
    • Test point : TP6(Lch), TP7(Rch)
    • Input signal : 1kHz / 10kHz (LINE IN)
    • Adjustment location : SFR351 (Lch)
    SFR352 (Rch)
    Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP6, TP7 becomes -28 dBV. Record and play back the 1kHz and 10kHz signals and adjust SFRs so that the output of the 10kHz signals becomes 0dB ± 0.5dB with respect to that of the 1kHz signal.

14. REC/PB Sensitivity Check
    Settings : • Test tape : TTA–602
    • Test point : TP6(Lch), TP7(Rch)
    • Input signal : 1kHz (LINE IN)
    Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP6, TP7 becomes -8 dBV. Record and play back the 1kHz signals and check that the output is 0 ± 3.5dB.

PRACTICAL SERVICE FIGURE

<TUNER SECTION>

<FM SECTION>

IHF Sensitivity :	Less than 10 / 9 / 9dB
(THD 3%)	[at 87.5 / 98.0 / 108.0MHz]
S/N 50dB Quieting sensitivity :	
	Less than 35dB
	[at 98.0MHz]
Signal to noise ratio :	Mono : More than 68dB
	Stereo : More than 66dB
	[at 98.0MHz]
Distortion :	Mono : Less than 1.2%
	Stereo : Less than 2.0%
	[at 98.0MHz]
Auto stop level :	25dB ± 10dB [at 98.0MHz]
Stereo separation :	More than 30dB [at 98.0MHz]
Intermediate frequency :	10.7MHz

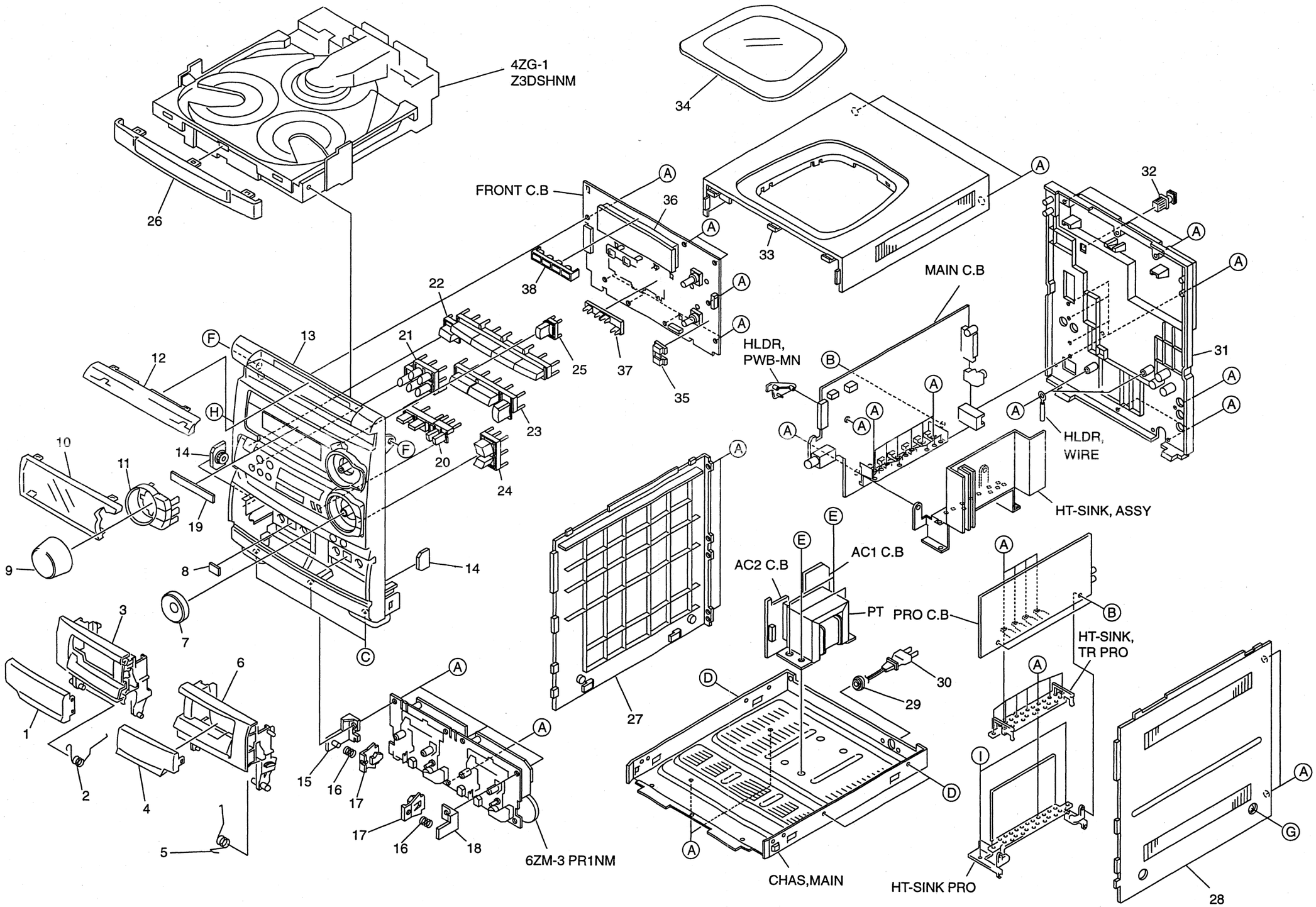
<AM SECTION>

Sensitivity :	Less than 60dB
(S/N 20 dB)	[at 600kHz]
	Less than 58dB
	[at 1000kHz]
	Less than 58dB
	[at 1400kHz]
Signal to noise ratio :	More than 36dB
	[at 1000kHz]
Distortion :	Less than 1.5%
	[at 1000kHz]
Auto stop level :	52dB +10/-15dB
	[at 1000kHz]
Intermediate frequency :	450kHz

<DECK SECTION>

Tape speed :	3000Hz ± 45Hz
Wow & flutter :	Less than 0.25% (W.R.M.S)
Take-up torque :	30 ~ 55g-cm (FWD, REV)
F.F torque :	75 ~ 180g-cm
REW torque :	75 ~ 180g-cm
Back tension :	2 ~ 7g-cm (FWD, REV)
PB output level :	2.8V± 2dB (SP OUT 2V)
REC/PB output level :	0 ± 3.0dB (NORM)
Distortion (REC/PB) :	Less than 2.0% (NORM)
Noise level (PB) :	Less than 25mV(NORM)
Noise level (REC/PB) :	Less than 30mV(NORM)
Erasing ratio :	More than 60dB
	(at 125Hz, +10VU, NORM)
Test tape :	TTA–602 (NORM)

MECHANICAL EXPLODED VIEW 1 / 1

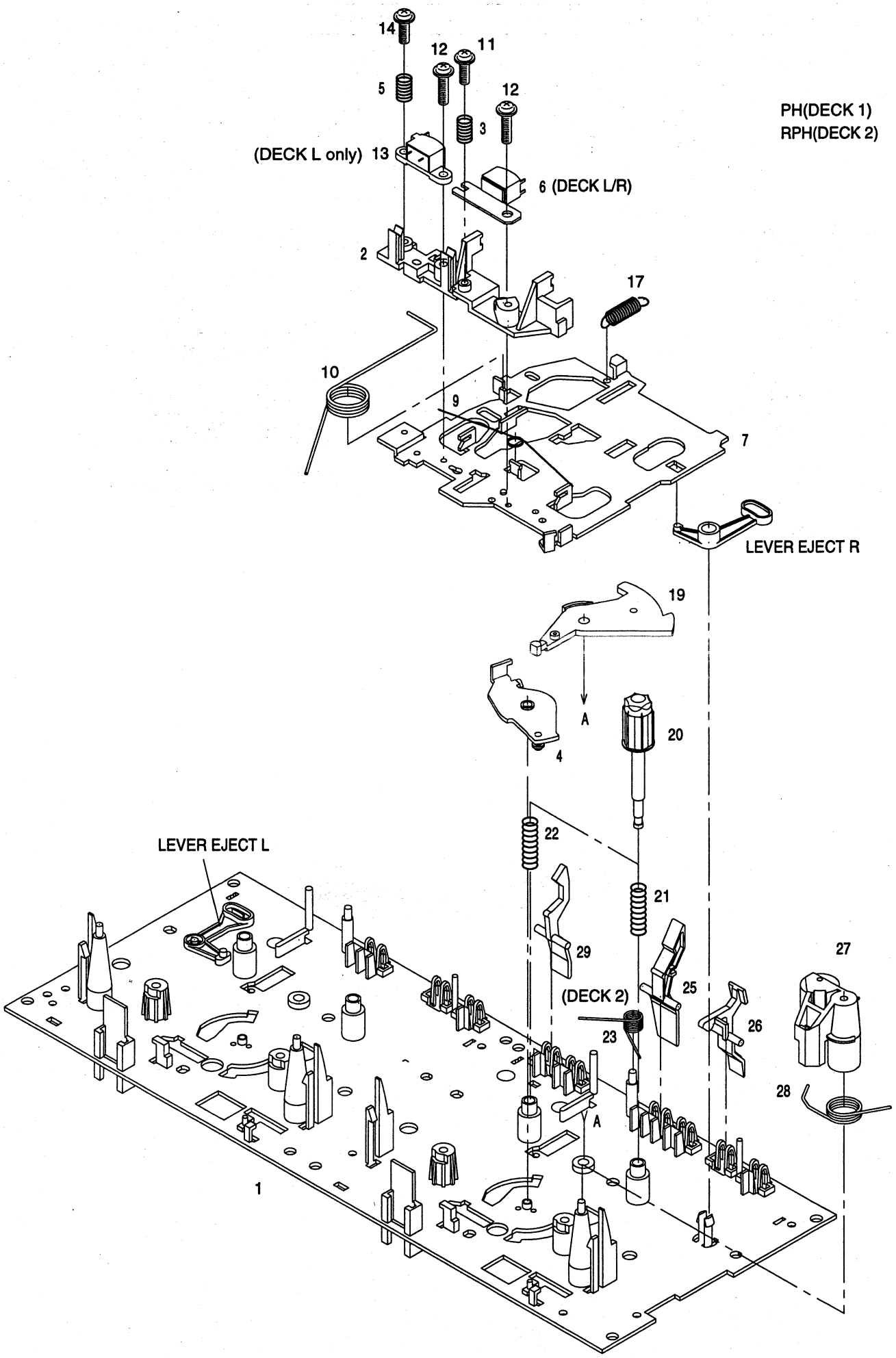


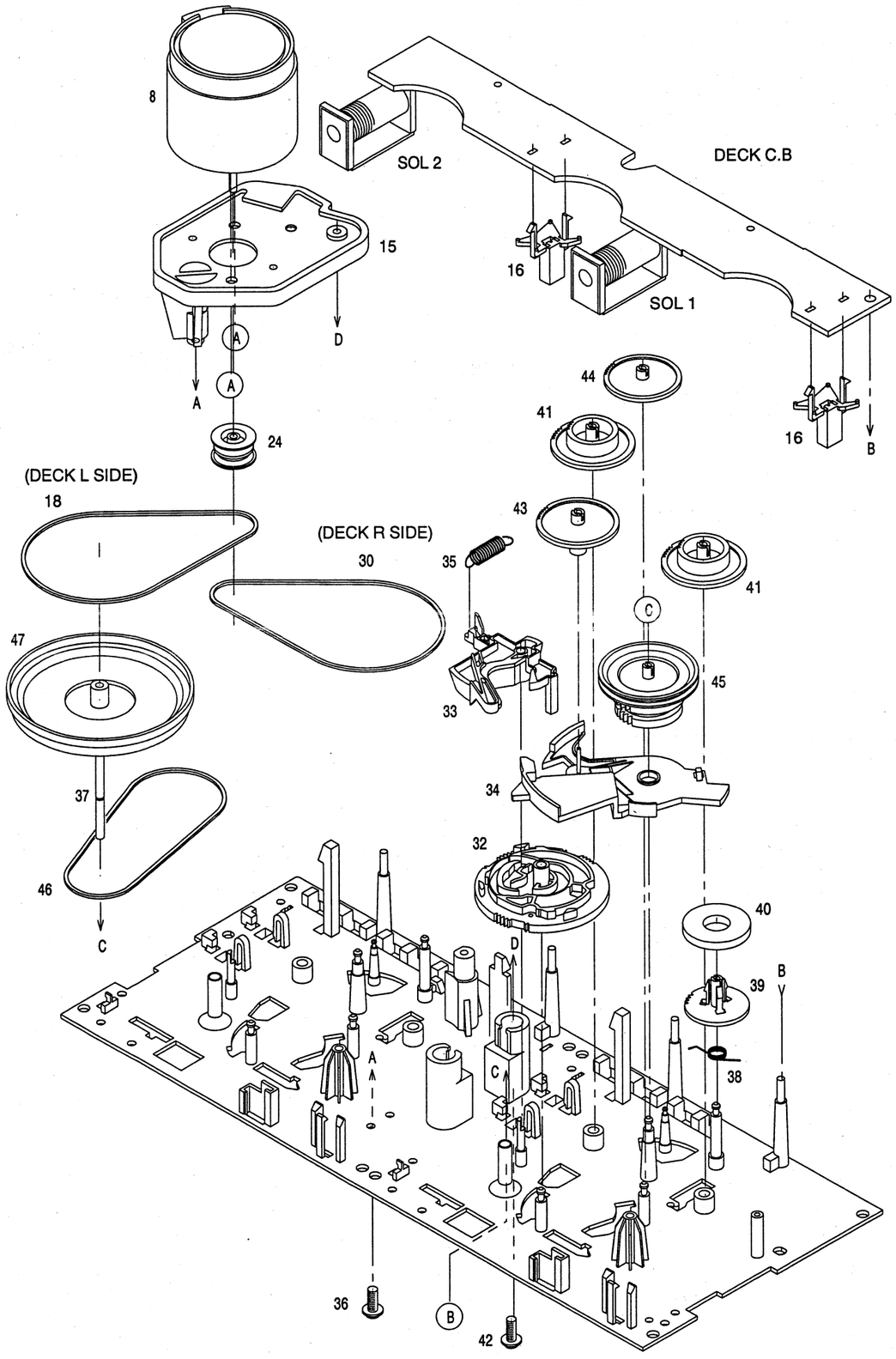
MECHANICAL PARTS LIST 1 / 1

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-NB8-012-010		WINDOW,CASS 1
2	82-NF5-218-010		SPR-T,EJECT 1 (SIN)
3	88-NF8-044-010		BOX,CASS 1 1WAY
4	87-NB8-013-010		WINDOW,CASS 2
5	82-NF5-219-010		SPR-T,EJECT 2 (SIN)
6	88-NF8-043-010		BOX,CASS 2 1WAY
7	88-NF8-016-010		KNOB,RTRY JOG
8	81-532-080-010		LABEL, CASS. COMPT
9	87-NB8-015-010		KNOB,RTRY VOL
10	88-NFV-011-010		WINDOW,DISPLAY U
11	88-NFV-007-010		KEY,GEQ PRO
12	87-NB8-009-010		WINDOW,CD
13	88-NFV-001-010		CABI,FR U
14	87-NF8-220-010		DMPR,150
15	87-NF4-216-010		HLDR,LOCK 1
16	86-NF9-224-010		SPR-C,LOCK
17	82-NF5-229-010		PLATE,LOCK
18	87-NF4-217-010		HLDR,LOCK 2
19	88-NFV-010-010		PLATE,PRO
20	88-NF8-006-210		KEY,REC
21	88-NF8-014-110		KEY,CD
22	88-NF8-007-010		KEY,FUNCTION
23	88-NF8-019-010		KEY,PLAY 1WAY ASSY
24	88-NF8-013-010		KEY,ASSY FF
25	88-NFV-006-010		KEY,PRO
26	88-NF8-046-010		PANEL,TRAY
27	87-NB8-051-010		PANEL,LEFT U
28	88-NF8-048-010		PANEL,RIGHT 2 U
29	87-085-189-010		BUSHING, CORD (U)
⚠ 30	87-050-053-010		AC CORD ASSY,U-2
31	88-NFV-021-010		CABI,REAR USTNM MT320
32	84-ZG1-245-210		CAP,OPTICAL
33	87-NF9-055-010		PANEL,TOP
34	86-NFZ-001-010		WINDOW,TOP
35	88-NF8-207-010		GUIDE,FF
36	88-NF8-205-010		GUIDE,FL
37	88-NF8-208-010		GUIDE,PLAY 1WAY
38	88-NFV-201-010		GUIDE,PRO
A	87-067-703-010		TAPPING SCREW, BVT2+3-10
B	87-NF4-224-010		S-SCREW,IT3B+3-8 CU
C	87-067-688-010		BVTT+3-6
D	87-721-096-410		QT2+3-10 GLD
E	87-078-019-010		S-SCREW,IT+4-6
F	87-721-097-410		QT2+3-12 GLD
G	87-067-641-010		UTT2+3-8(W/O SLOT)BL
H	87-723-096-410		QT2+3-10W/O SLOT BL
I	87-067-579-010		TAPPING SCREW, BVT2+3-8

TAPE MECHANISM EXPLODED VIEW 1 / 1





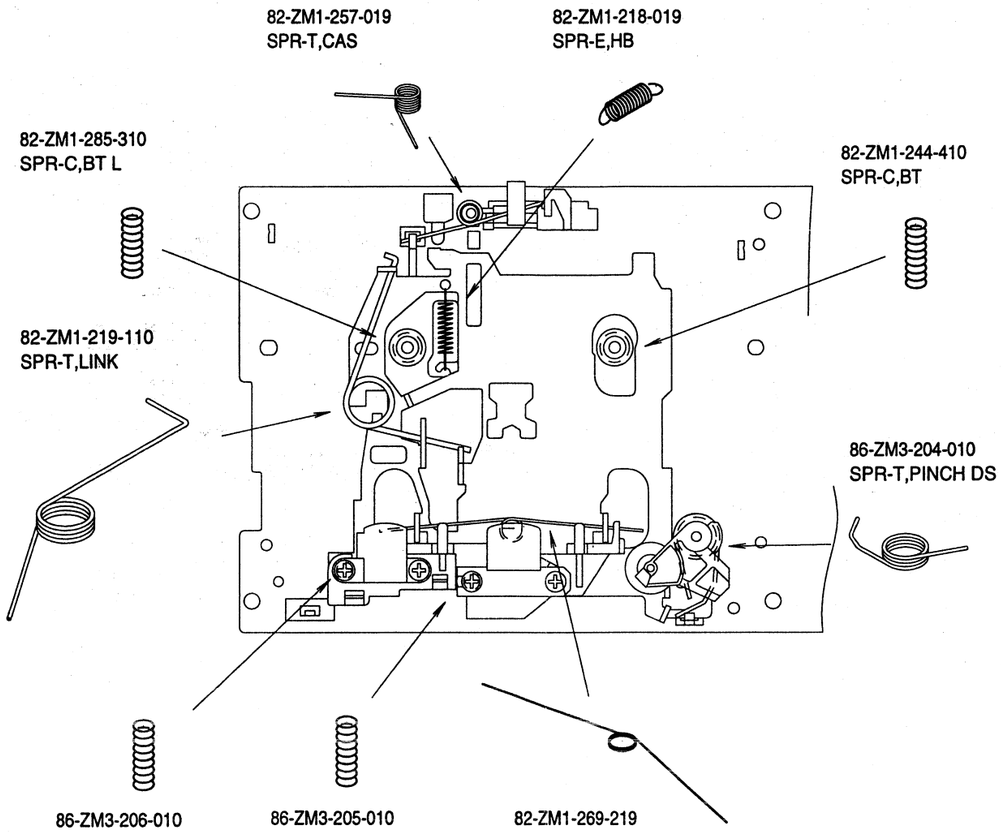
TAPE MECHANISM PARTS LIST 1 / 1

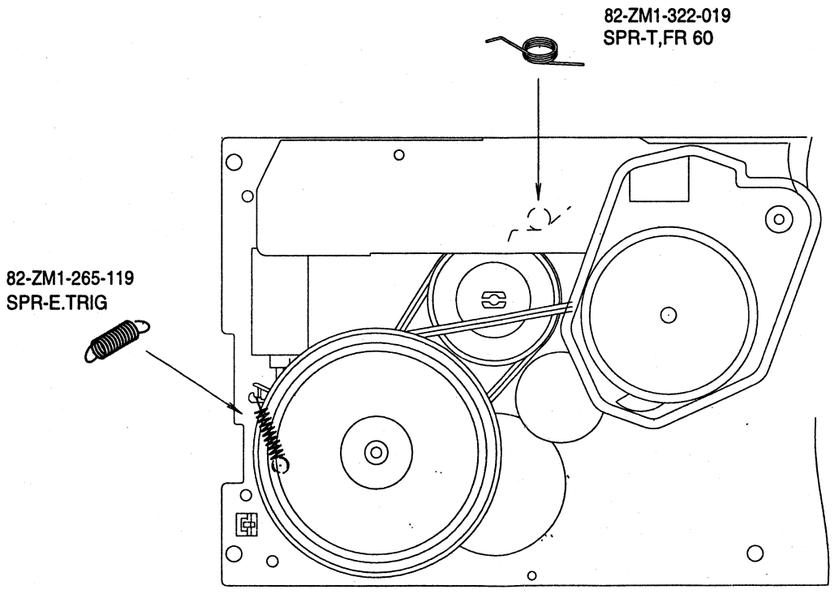
If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-ZM3-212-010		CHAS ASSY,SS
2	86-ZM3-202-010		BASE,HEAD S
3	86-ZM3-205-010		SPR-C,RPH S
4	82-ZM1-333-210		PLATE,LINK 2
5	86-ZM3-206-010		SPR-C,EH S
6	87-A90-403-019		HEAD,RPH MS15R
7	86-ZM3-201-010		CHAS,HEAD S
8	87-045-347-019		MOT,SHU2L 70(M1)
9	82-ZM1-269-219		SPR-T,BRG
10	82-ZM3-323-119		SPR-T,LINK
11	86-ZM3-209-010		S-SCREW,ASIMUTHS
12	86-ZM3-207-010		S-SCREW,RPH
13	87-A90-404-019		HEAD,EH LE15B
14	86-ZM3-208-010		S-SCREW,EH
15	86-ZM3-203-010		HLDR,MOTS
16	82-ZM1-245-210		HLDR,IC
17	82-ZM1-218-019		SPR-E,HB
18	86-ZM3-211-010		BELT,RS
19	82-ZM1-222-219		LVR,PLAY
20	82-ZM1-217-419		REEL,TABLE
21	82-ZM1-244-519		SPR-C,BT
22	82-ZM1-285-410		SPR-C,BT L
23	82-ZM1-257-019		SPR-T,CAS
24	82-ZM3-221-010		PULLEY,MOT 2M
25	82-ZM1-242-019		LVR,CAS

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
26	82-ZM1-243-019		LVR,STOP
27	82-ZM1-344-119		LVR ASSY,PINCH
28	86-ZM3-204-010		SPR-T,PINCHDS
29	82-ZM1-240-119		LVR,REC (DECK 2)
30	86-ZM3-210-010		BELT,PS
31	82-ZM1-223-010		GEAR,PLAY
32	82-ZM3-305-019		GEAR,CAM M2
33	82-ZM1-227-319		LVR,TRIG
34	82-ZM3-306-110		LVR,FR M2
35	82-ZM1-265-119		SPR-E,TRIG
36	85-ZM3-203-019		S-SCREW MOTOR M3
37	82-ZM1-236-019		CAPSTAN N 2-41.5
37	82-ZM1-239-019		CAPSTAN N 2.2-41.7
38	82-ZM1-322-019		SPR-T,FR60
39	82-ZM1-220-219		GEAR,IDLER
40	82-ZM3-616-019		RING MAGNET 4
41	82-ZM1-216-319		GEAR,REEL
42	85-ZM3-213-010		S-SCREW,HLDR MOT 3
43	82-ZM1-225-219		GEAR,FR
44	82-ZM1-226-019		GEAR,REW
45	82-ZM3-333-210		SLIP DISK ASSY 2
46	82-ZM1-338-010		BELT FR4
47	82-ZM1-349-019		FLY-WHL RW (DECK L)
47	82-ZM3-331-019		FLY-WHL R2W (DECK R)
A	87-251-071-417		U+2.6-4
B	80-ZM6-243-019		SH,1.75-3.6-0.5 SLT

SPRING APPLICATION POSITION



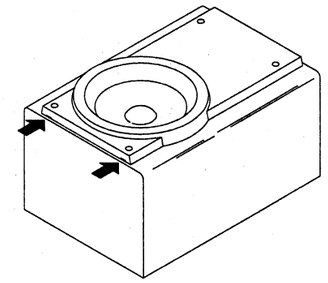


SPEAKER DISASSEMBLY INSTRUCTIONS

Type.1

矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットのビスを取り、スピーカーユニットを外してください。

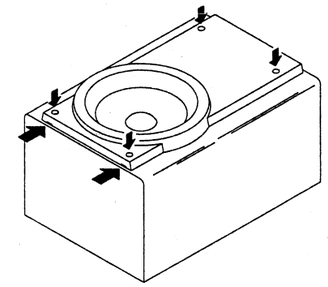
Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



Type.2

グリルフレームを外し、4個のゴムキャプをマイナスドライバーで端の方から持ち上げて外すと中にビスが有りますので、ビスを取り外します。矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットのビスを取り、スピーカーユニットを外してください。

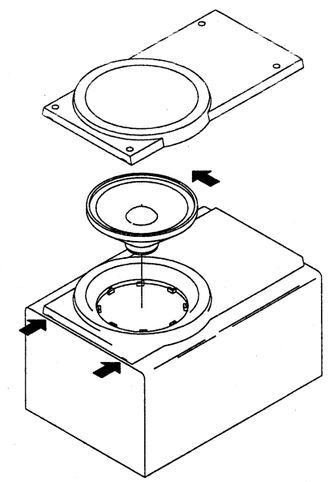
Remove the grill frame and four pieces of rubber caps by pulling out with a flat-bladed screwdriver Remove the screws from hole where installed rubber caps. Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



Type.3

矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットの凹にマイナスドライバーを差し込んで、反時計方向に回転させスピーカーユニットを外してください。スピーカーユニット交換後は時計方向にクリック音がするまで、回転させて取り付けます。

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Turn the speaker unit to counter-clockwise direction while inserting a flat-bladed screwdriver into one of the hollows around speaker unit, and then remove the speaker unit. After replacing the speaker unit, install it turning to clockwise direction until "click" sound comes out.



SPEAKER PARTS LIST (SX-NA302<AUST>)

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-NS5-012-010		BADGE,AIWA 35
2	87-NS7-611-010		CORD,SPKR
3	87-NSH-612-010		SPKR,CERAMIC ASSY
4	87-NSJ-602-010		SPKR 120
5	88-NSJ-001-010		PANEL,FR

SPEAKER PARTS LIST (SX-R275<YUST>)

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-YS1-004-010		GRILLE FRAME ASSY
2	87-YS6-002-010		SPKR, CORD Y
3	87-YS6-601-010		SPKR, 100

SPEAKER PARTS LIST (SX-C605<YUST>)

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	83-NSM-010-010		SPEAKER CORD
2	87-YS3-001-010		PANEL,FRONT ST(C600)
3	87-YS3-003-010		GRILL FRAME ASSY(C600)
4	87-YS7-602-010		SPKR, 100

ACCESSORIES / PACKAGE LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	88-NFV-903-010		IB,U(ESF)M
2	87-006-225-010		AM LOOP ANT NC2
3	87-A90-064-010		FEEDER-ANT,FM(SHS)
4	88-NFV-605-010		RC UNIT,RC-8AS

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
番号	連絡内容
G— —	
G— —	
G— —	

アイワ株式会社
AIWA CO.,LTD.

9620450, 750038
Tokyo Japan

〒110-8710 東京都台東区池之端1-2-11 ☎03（3827）3111（代表）

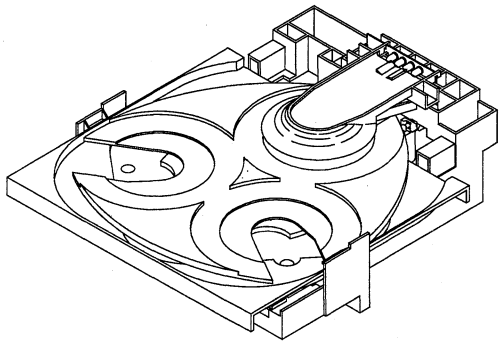
Printed in Singapore

aiwa

aiwa SERVICE

VIDE-V22059

4ZG-1Z3
4ZG-1Z4



CD MECHANISM

• BASIC CD MECHANISM: KSM-2131BAM
3ZG-2 E1
KSM-2131FAM

• TYPE: English

SERVICE MANUAL

RENEWAL MANUAL

BASIC NAME	DERIVATION NAME							
4ZG-1Z3	D	—	—	—	—	—	—	—
	D	DL	SH	—	—	—	—	—
4ZG-1Z4	D	DL	SH	MD	—	—	—	—

NOTE : 4ZG-1Z3 have the same BASIC NAME but use the different mechanisms.

- This Service Manual has various derivation.Derivation name is indicated by the Service Manual for each model.
- This Service Manual include modification parts both 09-983-249-3C1 and 09-983-249-3OT(OLD).

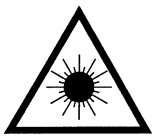
S/M Code No 09-983-249-30T

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynling laserstÂling ved Âbning, nÂr sikkerhedsafbrydere er ude af funktion. UndgÂ udsÊ ttelse for strÂling.

VAROITUS!

Laiteen K%ytt%aminen muulla kuin t%ss%ak%ytt^ ohjeessa mainitulla tavalla saattaa altistaa k%yt-t%j%a turvallisuusluokan 1 ylitt%v%alle n%akym%att^ m%alle lasers%ateilylle.

VARNING!

Om apparaten anv%ands pÂ annat s%att %an vad som specificeras i denna bruksanvisning, kan anv%andaren uts%attas f^ r osynling laserstrÂlning, som ^ verskrider gr%ansen f^ r laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

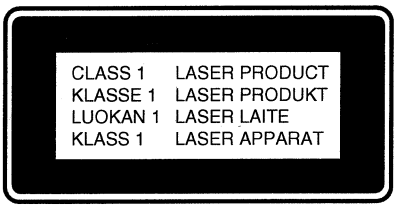
ATTENTION

L?utilisation de commandes, rÈglages ou procÈdures autres que ceux spÈcifiÈs peut entraÎner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserstÂling ved Âbning, nÂr sikkerhedsafbrydereer ude af funktion. UndgÂ udsÊ ttelse for strÂling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

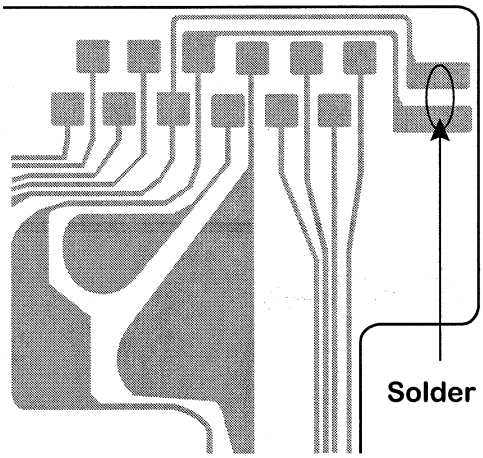


Precaution to replace Optical block (KSS-213B/213F)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in the right figure.

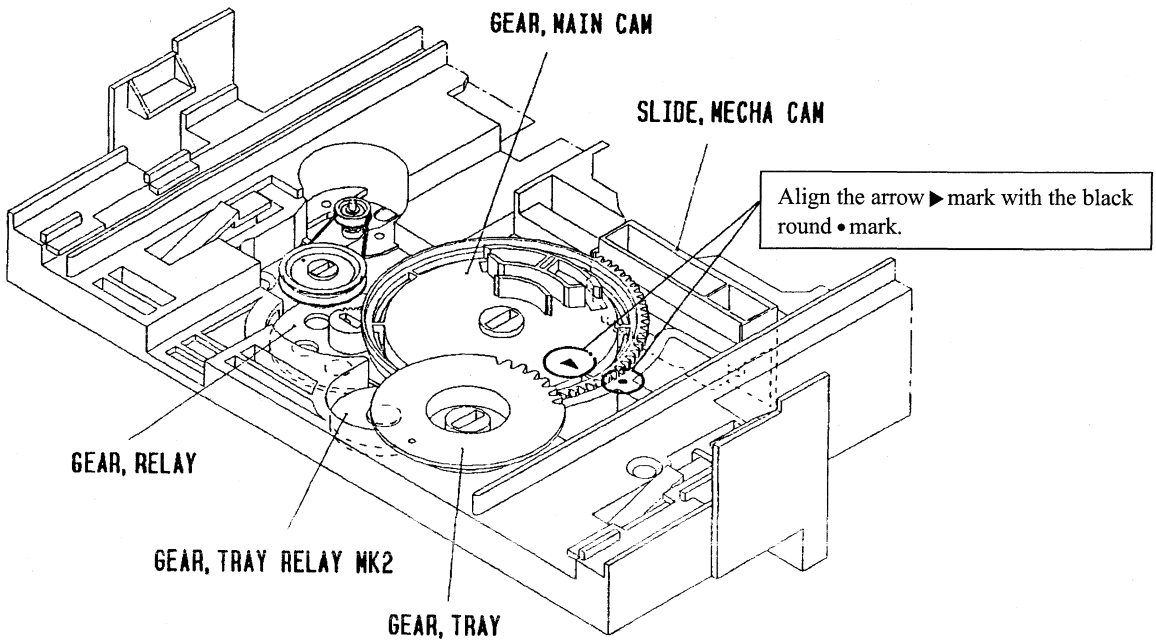
PICK-UP Assy P.W.B



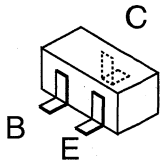
How to Adjust the Rotating Phase of the Gear, Main Cam

1) Push down the hooking catch of the CHAS. MECH, and remove the TRAY.
2) Align the arrow mark of the Gear, Main Cam with the black round mark of the CHAS, MECHA as shown below.
3) Confirm that the Slide, Mech Cam is located in the right position, then insert the TRAY gently.

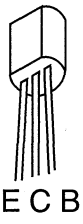
Caution: If the rotating phase of the Gear, Main Cam is incorrectly adjusted, the chucking operation and tray movement will have malfunction.



TRANSISTOR ILLUSTRATION



2SA1235
2SC3052
DTC144TK
RT1N141C



2SA1318
2SD655
KTA1266

This is the SERVICE MANUAL for the BASIC CD MECHANISM of BASIC NAME: 4ZG-1. This BASIC NAME includes the following models as shown under the SUFFIX name: DERIVATION NAME. Please use this manual with the separate SERVICE MANUAL for DERIVATION NAME.

BASIC CD MECHANISM: 4ZG-1Z3 DSH

SUFFIX
(DERIVATION NAME)

BASIC NAME: 4ZG-1Z3 (THE 3rd SANYO IC MODEL)
4ZG-1Z4 (THE 4th SANYO IC MODEL)

BASIC NAME	DERIVATION NAME							
4ZG-1Z3	D	—	—	—	—	—	—	—
	D	DL	SH	—	—	—	—	—
4ZG-1Z4	D	DL	SH	MD	—	—	—	—

NOTE : 4ZG-1Z3 have the same BASIC NAME but use the different mechanisms.

DERIVATION NAME

D: Digital output function
DL: Digital output function (CD WINDOW Flash function LOW END Type)
MD: Digital output for Mini Disc
SH: Pick up equipped with shutter

MODEL NO. 4ZG-1Z3 (D)

ELECTRICAL MAIN PARTS LIST

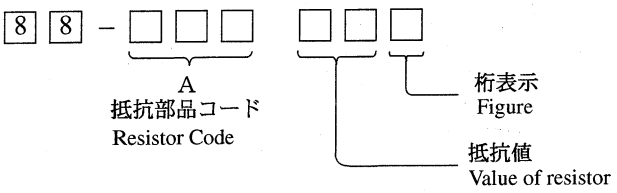
DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A20-446-010		C-IC,LA9241ML
	87-A20-459-010		C-IC,LC78622ED
	87-A20-445-010		IC,BA5936
TRANSISTOR			
	89-113-187-080		TR,2SA1318TU
	87-026-295-080		C-TR,DTC144TK
	87-A30-076-080		C-TR,2SC3052F
	89-406-554-580		TR,2SD655DE
	87-A30-073-080		C-TR,RT1N 141C
	87-A30-075-080		C-TR,2SA1235F
DIODE			
	87-002-564-080		DIODE,1SS133-RA
3CD C.B			
	84-ZG1-244-210		CABI,OPTICAL
C11	87-012-393-080		C-CAP,S 0.22-16 K W5R CM/CB
C12	87-012-157-080		C-CAP,S 330P-50 J CH GRM
C13	87-016-369-080		C-CAP,S 0.033-25 K B
C14	87-A10-201-080		C-CAP,S 0.33-16 K B
C15	87-010-590-080		C-CAP,S 0.015-16 K R
C16	87-016-369-080		C-CAP,S 0.033-25 K B
C17	87-010-181-080		C-CAP,S 1800P-50 K B
C18	87-016-369-080		C-CAP,S 0.033-25 K B
C19	87-010-198-080		C-CAP,S 0.022-25 K B
C20	87-010-178-080		C-CAP,S 1000P-50 K B
C21	87-012-393-080		C-CAP,S 0.22-16 K W5R CM/CB
C22	87-016-083-080		C-CAP,S 0.15-16 K R
C23	87-010-197-080		C-CAP,S 0.01-25 K B
C24	87-010-186-080		C-CAP,S 4700P-50 K B
C25	87-010-400-040		CAP,E 0.47-50 SME
C26	87-010-322-080		C-CAP,S 100P-50 J CH
C27	87-010-382-040		CAP,E 22-25 SME
C28	87-010-403-040		CAP,E 3.3-50 SME
C29	87-010-184-080		C-CAP,S 3300P-50 K B
C31	87-010-186-080		C-CAP,S 4700P-50 K B
C32	87-010-152-080		C-CAP,S 8P
C33	87-016-081-080		C-CAP,S 0.1-16 K R
C35	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C37	87-010-405-080		CAP,E 10-50 M SME
C38	87-010-263-080		CAP,E 100-10 SME
C39	87-010-189-020		C-CAP,S 8200P-50 K B
C40	87-010-401-080		CAP,E 1-50 M SME
C41	87-016-081-080		C-CAP,S 0.1-16 RK
C42	87-010-263-080		CAP,E 100-10 SME
C43	87-010-197-080		C-CAP,S 0.01-25 K B
C44	87-010-263-080		CAP,E 100-10 SME
C46	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C47	87-010-260-080		CAP,E 47-25 SME
C48	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C49	87-010-404-080		CAP,E 4.7-50 M SME
C50	87-010-197-080		C-CAP,S 0.01-25 K B
C51	87-010-263-040		CAP,E 100-10 M SME
C52	87-012-156-080		C-CAP,S 220P-50 J CH GRM
C101	87-016-081-080		C-CAP,S 0.1-16 K R
C102	87-016-081-080		C-CAP,S 0.1-16 K R
C103	87-010-321-080		C-CAP,S 82P-50 J CH
C104	87-012-154-080		C-CAP,S 150P-50 J CH GRM
C105	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C109	87-010-197-080		C-CAP,S 0.01-25 K B
C111	87-010-312-080		C-CAP,S 15P
C112	87-010-154-080		C-CAP,S 10P-50 D CH
C113	87-010-322-080		C-CAP,S 100P-50 J CH
C115	87-010-404-080		CAP,E 4.7-50 M SME
C116	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C117	87-010-263-040		CAP,E 100-10 M SME
C118	87-010-178-080		C-CAP,S 1000P-50 K B
C119	87-010-154-080		C-CAP,S 10P-50 D CH
C120	87-018-209-080		CAP, CER 0.1-50V
C121	87-010-403-080		CAP,E 3.3-50 M SME
C122	87-010-403-080		CAP,E 3.3-50 M SME
C123	87-012-157-080		C-CAP,S 330P-50 J CH GRM
C124	87-012-157-080		C-CAP,S 330P-50 J CH GRM
C131	87-010-382-080		CAP,E 22-25 M SME
C191	87-010-263-040		CAP,E 100-10 M SME
C301	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C302	87-010-382-080		CAP,E 22-25 M SME
C303	87-010-260-080		CAP,E 47-25 SME
C501	87-010-381-080		CAP,E 1000-16 SMG
C502	87-010-197-080		C-CAP,S 0.01-25 K B
C504	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C505	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C506	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C507	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C509	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C510	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C603	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C610	87-010-405-080		CAP,E 10-50 M SME
C611	87-010-405-080		CAP,E 10-50 M SME
C701	87-010-405-080		CAP,E 10-50 M SME
C705	87-010-197-080		C-CAP,S 0.01-25 K B
C706	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C711	87-010-322-080		C-CAP,S 100P-50 J CH
C712	87-010-322-080		C-CAP,S 100P-50 J CH
C713	87-010-322-080		C-CAP,S 100P-50 J CH
C901	87-010-260-080		CAP,E 47-25 SME
C902	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
CON3	84-ZG1-648-010		CONN ASSY,6P
FC1	85-NFT-611-110		FF-CABLE 16P-1.0
FC4	84-ZG1-614-210		F-CABLE,5P 1.25 210MM
L11	87-005-602-080		COIL,10UH J LAV35
L101	87-005-614-080		COIL,100UH
L102	87-005-602-080		COIL,10UH J LAV35
LED901	87-A40-123-010		LED,SLZ-8128A-01-B
M601	87-045-305-010		MOT,RF-500TB
SFR101	87-024-437-080		SFR100K,RH063EC
SW701	87-036-109-010		SW,MICRO SPPB61
SW702	87-036-109-010		SW,MICRO SPPB61
X101	87-A70-046-010		VIB,XTAL 16.934MHZ
LED C.B			
LED701	87-A40-316-080		LED,SLR-56PCT31 GRN
LED702	87-A40-268-080		LED,SLH-56DCT31 ORN
LED703	87-A40-268-080		LED,SLH-56DCT31 ORN
LED704	87-A40-316-080		LED,SLR-56PCT31 GRN
T-T C.B			
C401	87-018-214-080		CAP,TC U 0.1-50 Z F SA
M401	87-045-364-010		MOT,BCH3B
PS401	87-026-573-010		SNSR,PHOTO GP1S53
MOTOR C.B			
M2	9X-262-513-210		SLED MOTOR ASSY
PIN3	91-564-722-110		CONNECTOR 6P
SW1	91-572-085-110		LEAF SW

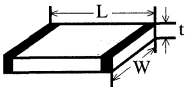
- Regarding connectors, they are not stocked as they are not the initial order items.
  The connectors are available after they are supplied from connector manufacturers upon the order is received.

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



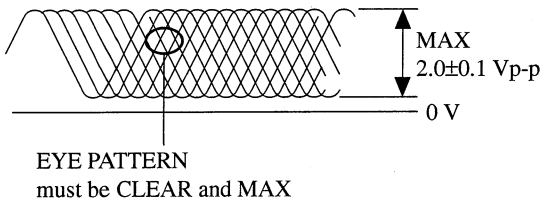
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Diamensions (mm) 外形 / Form	L	W	t	抵抗コード : A Resistor Code : A
1/16W	1608	5%	CJ		1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

WAVE FORM

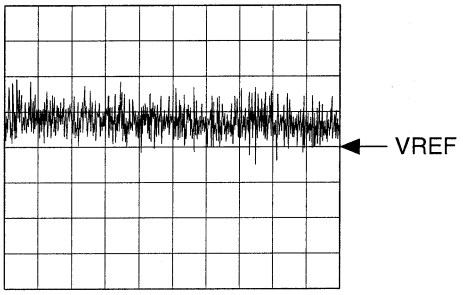
① IC11 Pin ㊶ (RFSM)

VOLT/DIV: 0.5V
TIME/DIV: 1μS



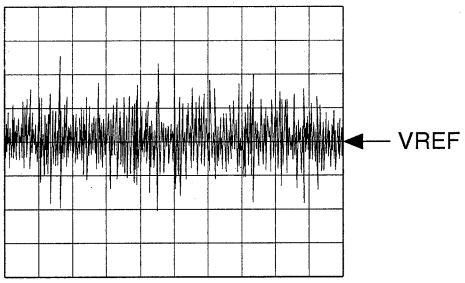
② IC11 Pin ⑯ (FD)

VOLT/DIV: 100mV
TIME/DIV: 1mS



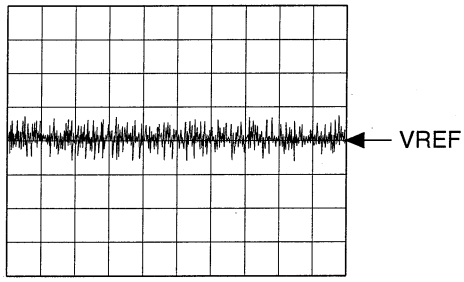
③ IC11 Pin ⑮ (TO)

VOLT/DIV:100mV
TIME/DIV: 1mS



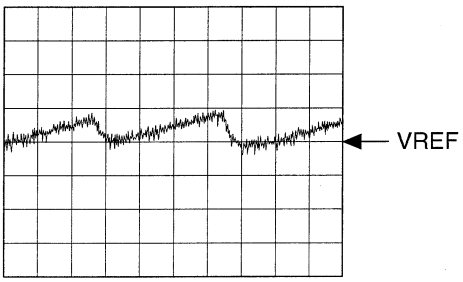
④ IC11 Pin ㉗ (SPD)

VOLT/DIV: 100mV
TIME/DIV: 1mS



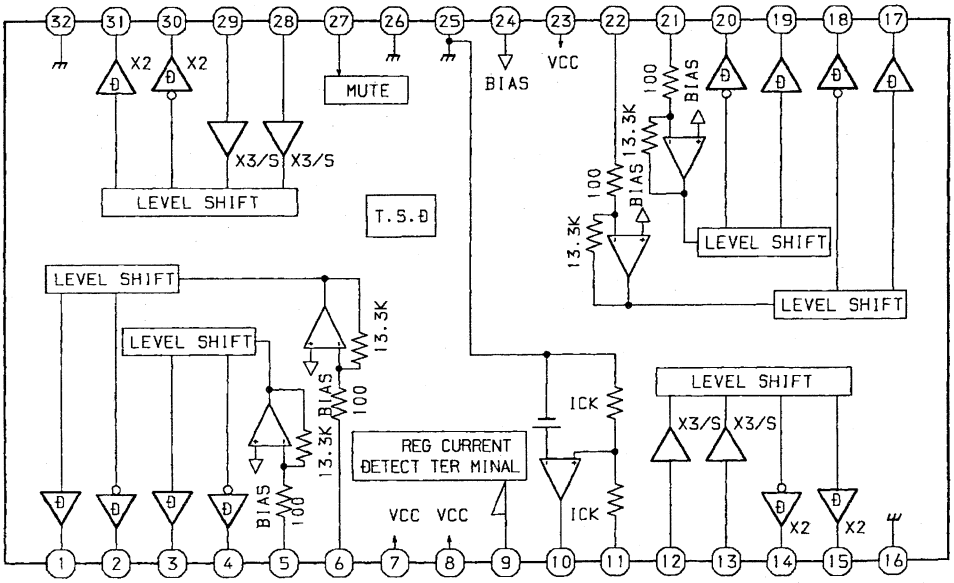
⑤ IC11 Pin ㉙ (SLD)

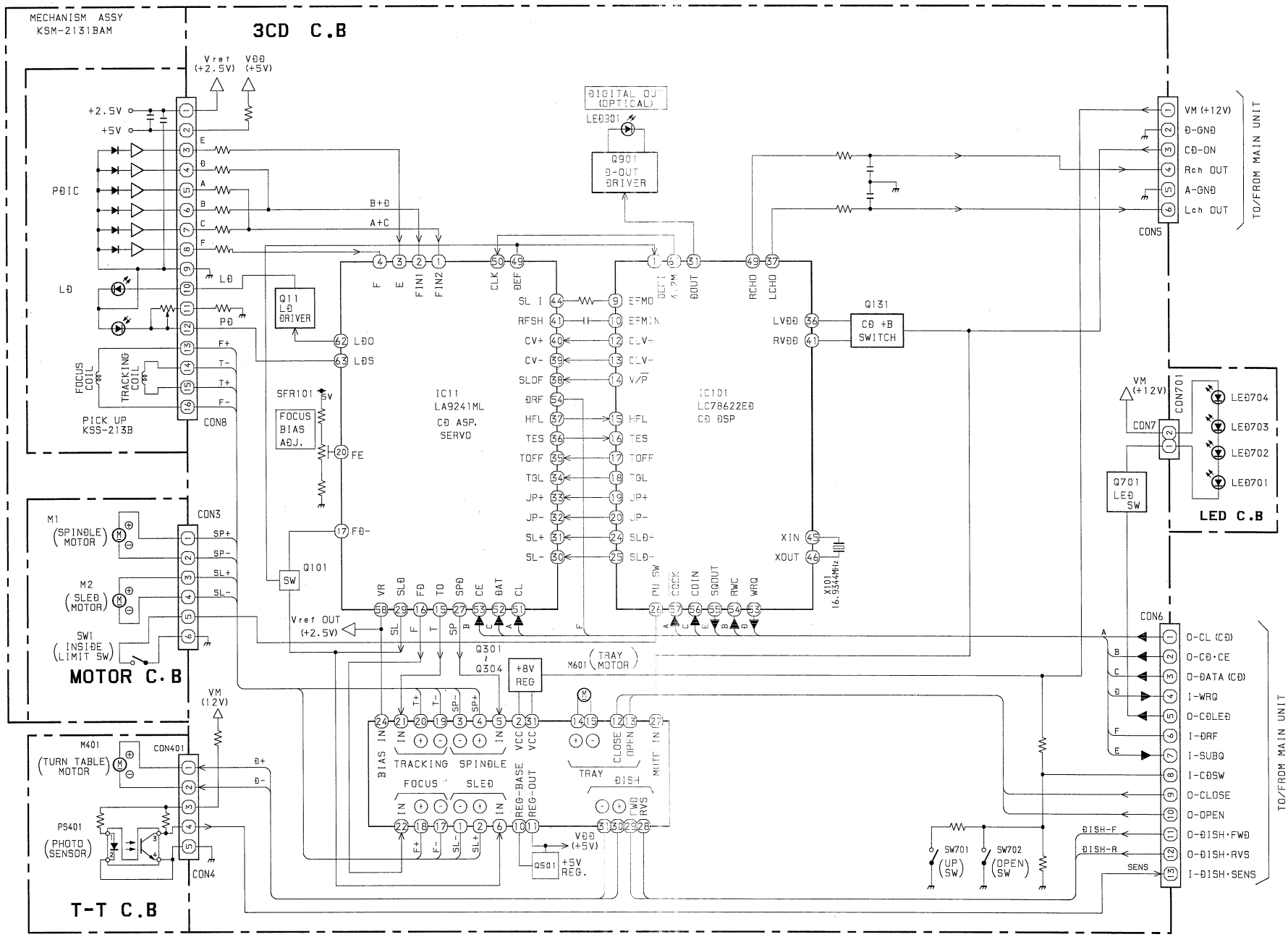
VOLT/DIV: 200mV
TIME/DIV: 2S

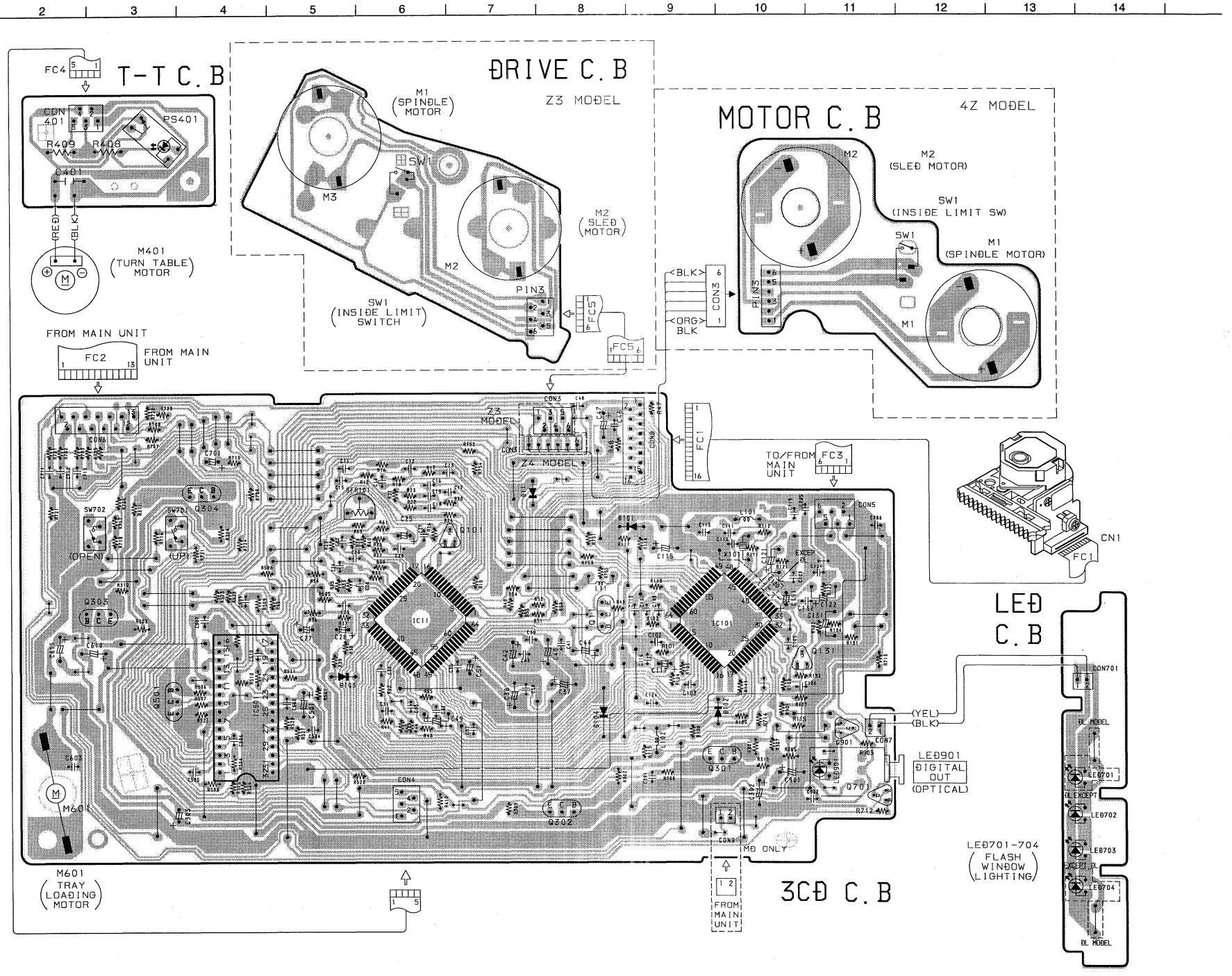


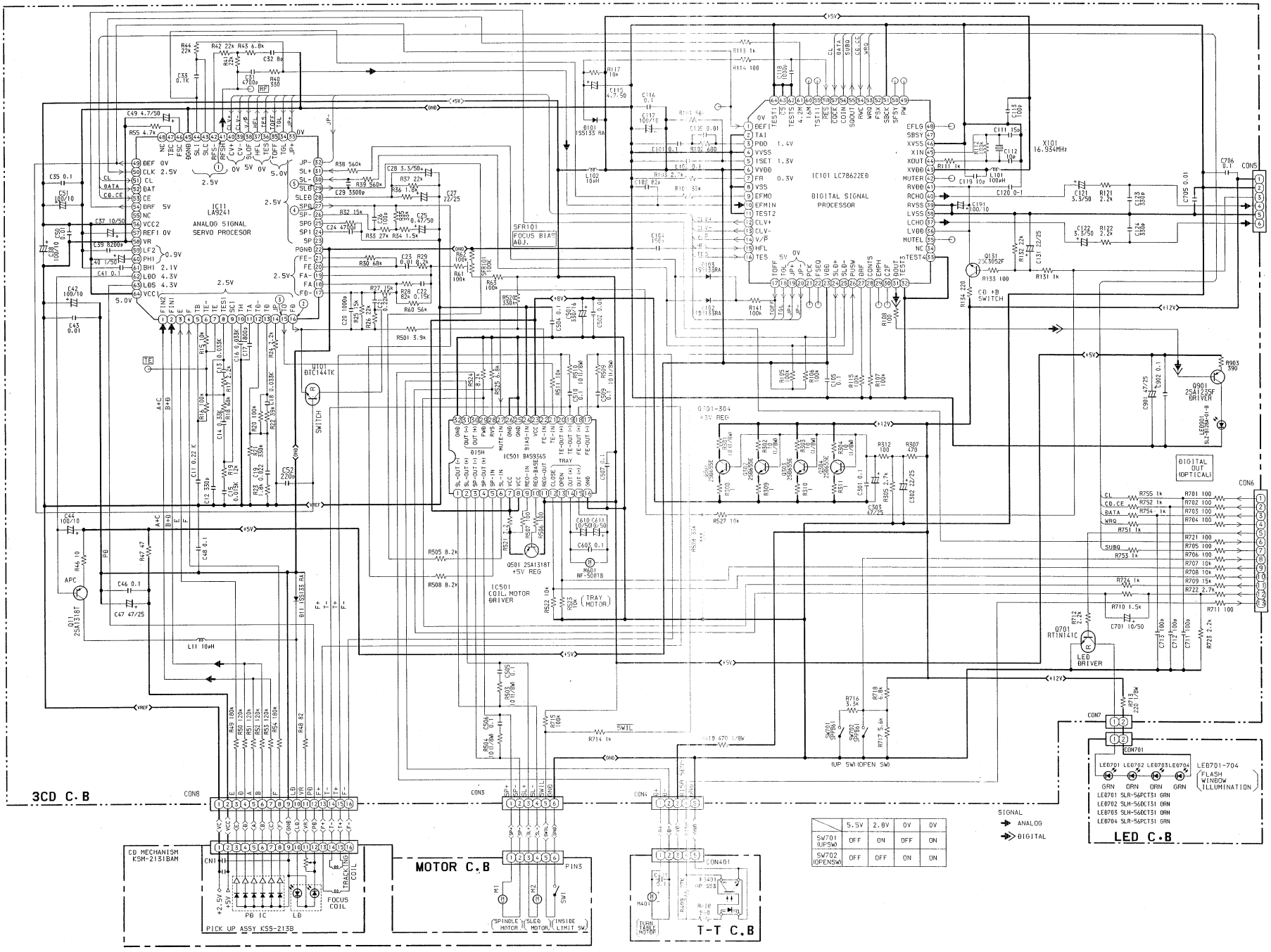
IC BLOCK DIAGRAM

IC, BA5936




MECHANISM ASSY
KSM-2131BAM
3CD C.B
PICK UP
KSS-213B
CON8
MOTOR C.B
CON3
M1
(SPINDLE MOTOR)
M2
(SLED MOTOR)
SW1
(INSIDE LIMIT SW)
T-T C.B
M401
(TURN TABLE MOTOR)
CON401
PS401
(PHOTO SENSOR)
CON4
IC11
LA9241ML
CD ASP, SERVO
IC101
LC78622ED
CD DSP
Q11
LD DRIVER
Q101
SW
SFR101
FOCUS BIAS ADJ.
Q301 ~ Q304
+8V REG
Q501
+5V REG.
Q901
D-OUT DRIVER
DIGITAL OUT (OPTICAL)
LED301
Q131
CD +B SWITCH
X101
16.9344MHz
CON5
TO/FROM MAIN UNIT
CON7
CON701
Q701
LED SW
LED C.B
LED704
LED703
LED702
LED701
CON6
SW701
(UP SW)
SW702
(OPEN SW)
TRACKING
SPINDLE
FOCUS
SLED
TRAY
DISH


T-T C.B
FC4
CON401
PS401
R409
R408
Q401
(RED)
(BLK)
M401
(TURN TABLE MOTOR)
DRIVE C.B
Z3 MODEL
M1
(SPINDLE MOTOR)
M2
(SLED MOTOR)
M3
SW1
(INSIDE LIMIT SWITCH)
PIN3
FC5
MOTOR C.B
4Z MODEL
M2
(SLED MOTOR)
SW1
(INSIDE LIMIT SW)
M1
(SPINDLE MOTOR)
PIN5
<BLK>
<ORG>
BLK
CON3
FROM MAIN UNIT
FC2
FROM MAIN UNIT
Z3 MODEL
Z4 MODEL
FC1
TO/FROM MAIN UNIT
FC3
CN1
FC1
SW702
SW701
(OPEN)
(UP)
Q304
Q305
Q303
Q302
IC11
IC101
M601
M601
(TRAY LOADING MOTOR)
MD ONLY
FROM MAIN UNIT
3CD C.B
LED C.B
CON701
BL MODEL
LED701
BL EXCEPT
LED702
LED703
EXCEPT BL
LED704
BL MODEL
(YEL)
(BLK)
LED901
DIGITAL OUT
(OPTICAL)
LED701-704
(FLASH WINDOW LIGHTING)



	5.5V	2.8V	0V	0V
SW701 (UPSW)	OFF	ON	OFF	ON
SW702 (OFFENSW)	OFF	OFF	ON	ON

IC, LA9241M

Pin No.	Pin Name	I/O	Description
1	FIN2	I	Pin to which external pickup photo diode is connected. RF signal is created by adding with the FIN1 pin signal. FE signal is created by subtracting from the FIN1 pin signal.
2	FIN1	I	Pin to which external pickup photo diode is connected.
3	E	I	Pin to which external pickup photo diode is connected. TE signal is created by subtracting from the F pin signal.
4	F	I	Pin to which external pickup photo diode is connected.
5	TB	I	DC component of the TE signal is input.
6	TE–	I	Pin to which external resistor setting the TE signal gain is connected between the TE pin.
7	TE	O	TE signal output pin.
8	TESI	I	TES "Track Error Sense" comparator input pin. TE signal is passed through a band-pass filter then input.
9	SCI	I	Shock detection signal input pin.
10	TH	I	Tracking gain time constant setting pin.
11	TA	O	TA amplifier output pin.
12	TD–	I	Pin to which external tracking phase compensation constants are connected between the TD and VR pins.
13	TD	I	Tracking phase compensation setting pin.
14	JP	I	Tracking jump signal (kick pulse) amplitude setting pin.
15	TO	O	Tracking control signal output pin.
16	FD	O	Focusing control signal output pin.
17	FD–	I	Pin to which external focusing phase compensation constants are connected between the FD and FA pins.
18	FA	I	Pin to which external focusing phase compensation constants are connected between the FD– and FA– pins.
19	FA–	I	Pin to which external focusing phase compensation constants are connected between the FA and FE pins.
20	FE	O	FE signal output pin.
21	FE–	I	Pin to which external FE signal gain setting resistor is connected between the FE pin.
22	AGND	—	Analog signal GND.
23	NC	—	No connection.
24	SP	O	Single ended output of the CV+ and CV– pin input signal.
25	SPG	I	Pin to which external spindle gain setting resistor in 12 cm mode is connected.
26	SP–	I	Pin to which external spindle phase compensation constants are connected together with SPD pin.
27	SPD	O	Spindle control signal output pin.
28	SLEQ	I	Pin to which external sled phase compensation constants are connected.
29	SLD	O	Sled control signal output pin.
30, 31	SL–, SL+	I	Sled advance signal input pin from microprocessor.
32, 33	JP–, JP+	I	Tracking jump signal input pin from DSP.
34	TGL	I	Tracking gain control signal input from DSP. Low gain when TGL = H.
35	TOFF	I	Tracking off control signal input pin from DSP. Off when TOFF = H.

Pin No.	Pin Name	I/O	Description
36	TES	O	Pin from which TES signal is output to DSP.
37	HFL	O	"High Frequency Level" is used to judge whether the main beam position is on top of bit or on top of mirror.
38	SLOF	I	Sled servo off control input pin.
39, 40	CV–, CV+	I	CLV error signal input pin from DSP.
41	RFSM	O	RF output pin.
42	RFS–	I	RF gain setting and EFM signal 3T compensation constant setting pin together with RFSM pin.
43	SLC	O	"Slice Level Control" is the output pin which controls the RF signal data slice level by DSP.
44	SLI	I	Input pin which control the data slice level by the DSP.
45	DGND	—	Digital system GND.
46	FSC	O	Output pin to which external focus search smoothing capacitor is connected.
47	TBC	I	"Tracking Balance Control" EF balance variable range setting pin.
48	NC	—	No connection.
49	DEF	O	Disc defect detector output pin.
50	CLK	I	Reference clock input pin. 4.23 MHz of the DSP is input.
51	CL	I	Microprocessor command clock input pin.
52	DAT	I	Microprocessor command data input pin.
53	CE	I	Microprocessor command chip enable input pin.
54	DRF	O	"Detect RF" RF level detector output.
55	FSS	I	"Focus Search Select" focus search mode (± search/+ search) select pin.
56	VCC2	—	Servo system and digital system Vcc pin.
57	REFI	—	Pin to which external bypass capacitor for reference voltage is connected.
58	VR	O	Reference voltage output pin.
59	LF2	I	Disc defect detector time constant setting pin.
60	PH1	I	Pin to which external capacitor for RF signal peak holding is connected.
61	BH1	I	Pin to which external capacitor for RF signal bottom holding is connected.
62	LDD	O	APC circuit output pin.
63	LDS	I	APC circuit input pin.
64	VCC1	—	RF system Vcc pin.

IC, LC78622E

Pin No.	Pin Name	I/O	Description	
1	DEFI	I	Defect sense signal (DEF) input pin. (Connect to 0V when not used).	
2	TAI	I	For PLL.	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.
3	PDO	O		Phase comparator output pin to control external VCO.
4	VVSS	—		GND pin for built-in VCO. Be sure to connect to 0V.
5	ISET	I		Pin to which external resistor adjusting the PD0 output current.
6	VVDD	—		Power supply pin for built-in VCO.
7	FR	I		Pin for VCO frequency range adjustment.
8	VSS	—	Digital system GND. Be sure to connect to 0V.	
9	EFMO	O	For slice level control.	EFM signal output pin.
10	EFMIN	I		EFM signal input pin.
11	TEST2	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.	
12, 13	CLV+, CLV–	O	Disc motor control output. Three level output is possible using command.	
14	V/$\overline{P}$	O	Rough servo or phase control automatic selection monitoring output pin. Rough servo at H. Phase servo at L.	
15	HFL	I	Track detect signal input pin. Schmidt input.	
16	TES	I	Tracking error signal input pin. Schmidt input.	
17	TOFF	O	Tracking OFF output pin.	
18	TGL	O	Tracking gain selection output pin. Gain boost at L.	
19, 20	JP+, JP–	O	Track jump control signal output pin. Three level output is possible using command.	
21	PCK	O	EFM data playback clock monitoring pin 4.3218 MHz when phase is locked in.	
22	FSEQ	O	Sync signal detection output pin. H when the sync signal which is detected from EFM signal and thesync signal which is internally generated agree.	
23	VDD	—	Digital system power supply pin.	
24-28	SL+ - PUIN	I/O	General purpose input/output pin 1 to 5.	The pin is controlled by the serial data command from microprocessor. When the pin is not used, set the pin to the input terminal and connect to 0V, or alternately set the pin to output terminal and leave the pin open.
29	EMPH	O	De-emphasis monitor output pin. De-emphasis disc is being played back at H.	
30	C2F	O	C2 flag output pin.	
31	DOUT	O	DIGITAL OUT output pin. (EIAJ format).	
32, 33	TEST3, TEST4	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.	
34	N.C.	—	Not used. Set the pin to open.	
35	MUTEL	O	L-channel 1-bit DAC.	L-channel mute output pin.
36	LVDD	—		L-channel power supply pin.
37	LCHO	O		L-channel output pin.
38	LVSS	—		L-channel GND. Be sure to connect to 0V.
39	RVSS	—	R-channel 1-bit DAC.	R-channel GND. Be sure to connect to 0V.
40	RCHO	O		R-channel output pin.
41	RVDD	—		R-channel power supply pin.
42	MUTER	O		R-channel mute output pin.

Pin No.	Pin Name	I/O	Description
43	XVDD	—	Crystal oscillator power supply pin.
44	XOUT	O	Pin to which external 16.9344 MHz crystal oscillator is connected.
45	XIN	I	
46	XVSS	—	Crystal oscillator GND pin. Be sure to connect to 0V.
47	SBSY	O	Subcode block sync signal output pin.
48	EFLG	O	C1, C2, single and dual correction monitoring pin.
49	PW	O	Subcode P, Q, R, S, T, U and W output pin.
50	SFSY	O	Subcode frame sync signal output pin. Falls down when subcode enters standby.
51	SBCK	I	Subcode read clock input pin. Schmidt input. (Be sure to connected to 0V when not in use.)
52	FSX	O	Pin outputting the 7.35 kHz sync signal which is generated by dividing frequency of crystal oscillator.
53	WRQ	O	Subcode Q output standby output pin.
54	RWC	I	Read/write control input pin. Schmidt input.
55	SQOUT	O	Subcode Q output pin.
56	COIN	I	Command input pin from microprocessor.
57	$\overline{\text{CQCK}}$	I	Command input read clock or subcode read input clock from SQOUT pin
58	$\overline{\text{RES}}$	I	LC78622 reset input pin. Set this pin to L once when the main power is turned on.
59	TST11	O	Test signal output pin. Use this pin as open (normally L output).
60	16M	O	16.9344 MHz output pin.
61	4.2M	O	4.2336 MHz output pin.
62	TEST5	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.
63	$\overline{\text{CS}}$	I	Chip select signal input pin with built-in pull-down resistor. Be sure to connect to 0V while it is not controlling.
64	TEST1	I	Test signal input pin without built-in pull-down resistor. Be sure to connect to 0V.

Note: The same potential must be applied to the respective power supply terminals. (VDD, VVDD, LVDD, RVDD, XVDD)

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the function CD button.
   All FL display tubes will light up, and the test mode will be activated.

2. How to Cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.
   - Press the function button. (except CD function button)
   - Press the power switch button.
   - Disconnect the AC plug

3. CD Test Mode Functions
   When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

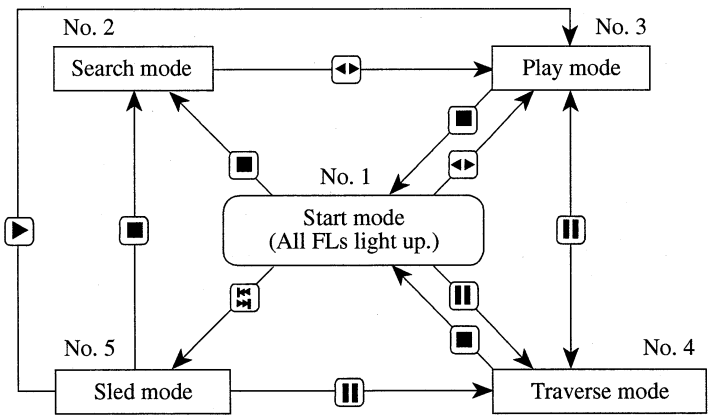
Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated.	• FL display check (All displays light.)
Search mode No.2	■key		• Laser diode turns always ON. (CD block power is ON.) • Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	• APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.) FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶key		• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check FOK/FZC
Traverse mode No.4	⏸ key		• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) adjustment
Sled mode No.5	⏮key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

*NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

*NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ⏸ status is active. If they are pressed, playback will not be possible after the ⏸ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ⏸ status, press the ■ key and return to the start mode (No.1).

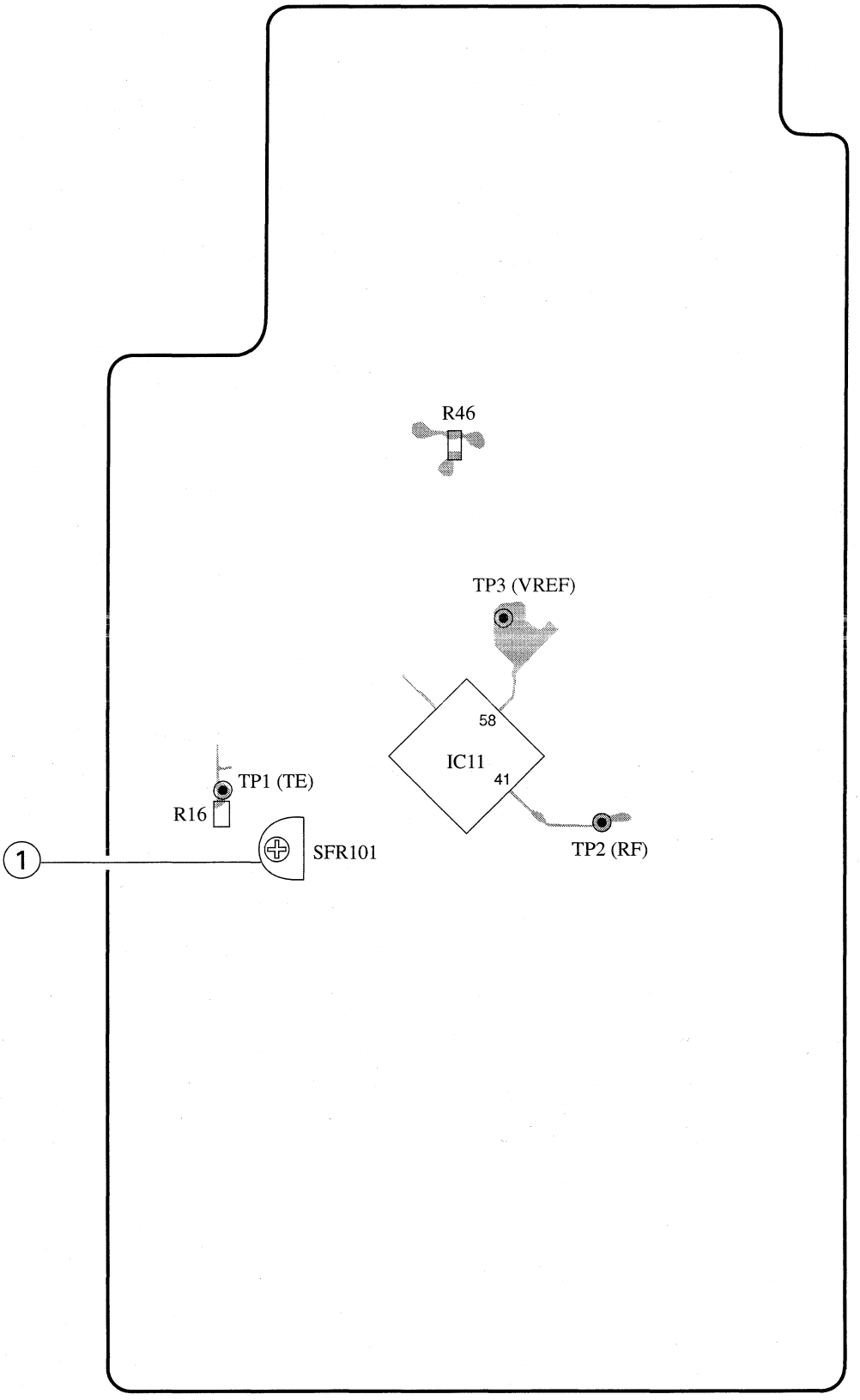
*NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the fi or fl keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



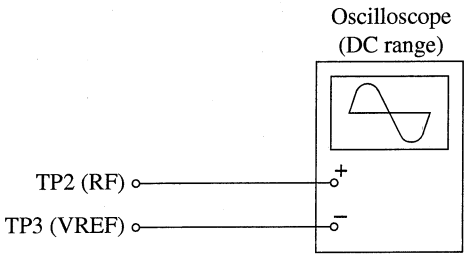
If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

3CD C.B (PATTERN SIDE)

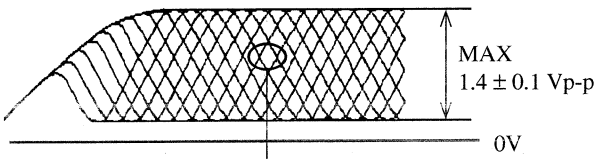


Note: ● Connect a probe (10: 1) of the oscilloscope test point for adjustment.
● Connect ground (⊖) terminal of oscilloscope probe to TP3 (VREF) for all adjustment.

1. Focus Bias Adjustment
Make the focus bias adjustment when replacing and repairing the optical block.



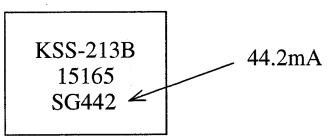
1) Connect an oscilloscope to test points TP2 (RF) and TP3 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second program.
4) Adjust SFR101 so that RF signal of the test point TP2 (RF) is MAX and CLEARREST.



EYE PATTERN
must be CLEAR and MAX

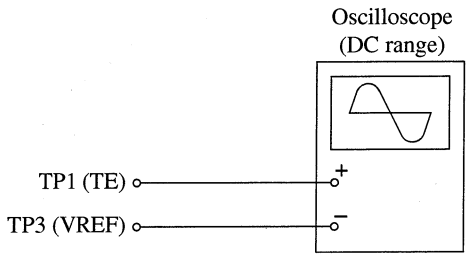
VOLT/DIV: 0.5V
TIME/DIV: 0.5μS

Note: The current of the laser signal can be checked with the voltages on both sides of R46 (voltage across 10Ω). The difference for the specified value shown on the label must be within ± 6.0mA.

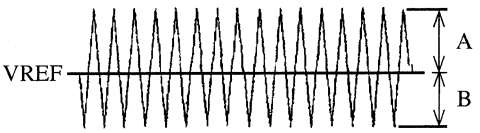


$$\text{Laser current Iop} = \frac{\text{Voltage across R46}}{10\Omega}$$

2. Tracking Balance Check



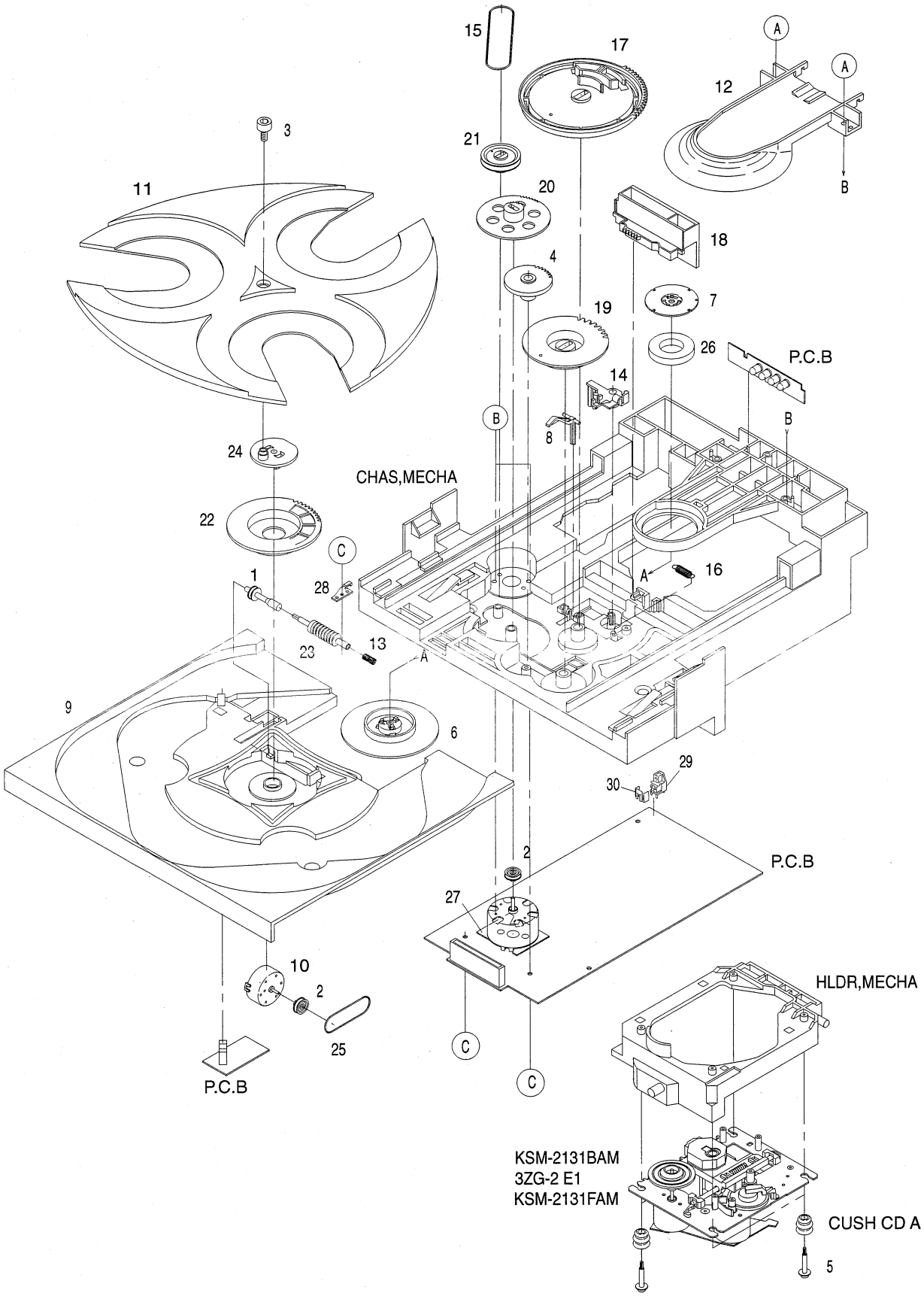
1) Connect an oscilloscope to test points TP1 (TE) and TP3 (VREF).
2) Start up the CD test mode.
3) Insert the test disc TCD-782 (YEDS-18) and enter the traverse mode of the CD test mode.
4) Confirm that the traverse waveform on an oscilloscope is vertically symmetrical as shown in the figure below.
5) After confirming the waveform, release the CD test mode.



A=B

VOLT/DIV: 20mV
TIME/DIV: 1mS

MECHANICAL EXPLODED VIEW 1/1

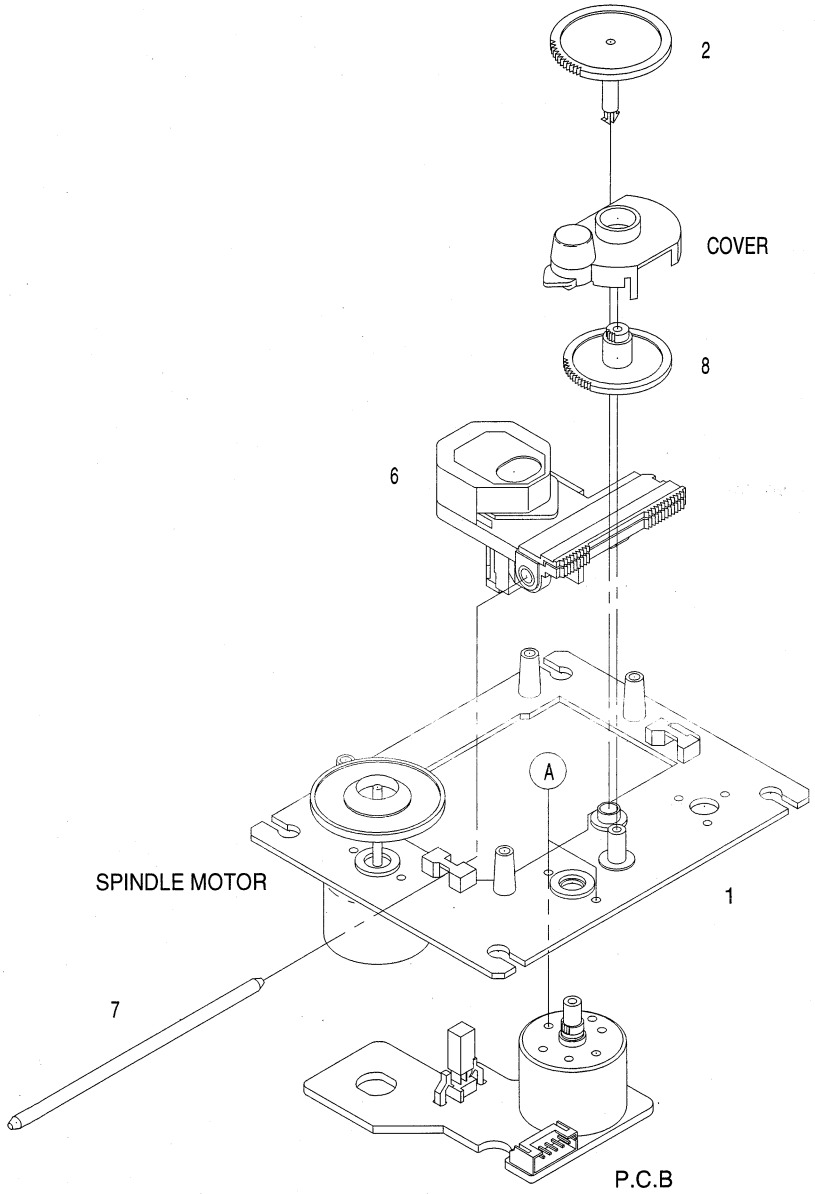


MECHANICAL PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	84-ZG1-239-210		PULLY,WORM N
2	81-ZG1-212-010		PULLY,LOAD MO
3	81-ZG1-239-010		S-SCREW,TT
4	81-ZG1-291-110		GEAR,TRAY RELAY NO3
5	81-ZG1-271-010		S-SCREW MECH REAR
6	81-ZG1-277-310		HLDR,MAGNET N
7	81-ZG1-255-110		PLATE,MAGNET MK2
8	83-ZG3-213-010		LVR,SW
9	84-ZG1-003-310		TRAY,NO2-B
10	87-045-364-010		MOTOR(BCH3B14)
11	84-ZG1-005-210		TURNTABLE,NO1(*)
12	84-ZG1-011-010		REFLECTOR,CD
13	84-ZG1-248-010		SPR-C,WORM
14	84-ZG1-208-210		LEVER,CAM
15	84-ZG1-209-010		BELT,SQ1.8-117.7
16	84-ZG1-211-010		SPR-E CAM S
17	84-ZG1-215-410		GEAR,MAIN CAM BLU
18	84-ZG1-216-310		SLIDE,MECHA CAM YEL
19	84-ZG1-205-110		GEAR,TRAY
20	84-ZG1-206-110		GEAR,RELAY
21	84-ZG1-207-010		PULLEY,RELAY
22	84-ZG1-221-010		GEAR,MAIN TT
23	84-ZG1-238-010		GEAR,WORM N
24	84-ZG1-224-010		LEVER,TT
25	84-ZG1-225-010		BELT,SQ1.0-63.3
26	84-ZG1-268-010		MAGNET,CLAMPER 97<Z4>
26	83-ZG3-602-010		RING,MAG<Z3>
27	87-045-305-010		MOTOR, RF-500TB DC-5V (2MA)
28	84-ZG1-259-010		SPR-P,WORM
29	84-ZG1-244-310		CABI,OPTICAL
30	84-ZG1-261-010		LID,OPTICAL
A	87-067-703-010		TAPPING SCREW, BVT2+3-10
B	87-251-070-410		U+2.6-3
C	87-067-981-010		BVT2+3-6 BLK

CD MECHANISM EXPLODED VIEW 1/1 (KSM-2131BAM)



CD MECHANISM PARTS LIST 1/1 (KSM-2131BAM)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	9X-262-587-110		MOTOR CHASSIS ASSY
2	92-626-907-010		GEAR(A)
6	98-848-379-310		OPTICAL PICK UP KSS-213B
7	92-626-908-010		SHAFT SLED
8	92-627-003-010		GEAR B
A	97-621-255-150		SCREW+P2-3

MODEL NO. 4ZG-1Z3/Z4 (D, DL, SH/D, DL, SH, MD)

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A20-446-010		C-IC,LA9241ML
	87-A20-459-010		C-IC,LC78622ED
	87-A20-445-010		IC,BA5936
TRANSISTOR			
	87-026-609-080		TR,KTA1266GR<DL>
	89-113-187-080		TR,2SA1318TU<D,4MD>
	87-026-295-080		C-TR,DTC144TK
	87-A30-076-080		C-TR,2SC3052F
	89-406-554-580		TR,2SD655DE
	87-A30-073-080		C-TR,RT1N 141C
	87-A30-075-080		C-TR,2SA1235F
DIODE			
	87-002-564-080		DIODE,1SS133-RA
3CD C.B			
	84-ZG1-244-210		CABI,OPTICAL
C11	87-012-393-080		C-CAP,S 0.22-16 K W5R CM/CB
C12	87-012-157-080		C-CAP,S 330P-50 J CH GRM
C13	87-016-369-080		C-CAP,S 0.033-25 K B
C14	87-A10-201-080		C-CAP,S 0.33-16 K B
C15	87-010-590-080		C-CAP,S 0.015-16 K R
C16	87-016-083-080		C-CAP,S 0.15-16 RK
C17	87-010-184-080		CHIP CAPACITOR 3300P(K)
C18	87-016-083-080		C-CAP,S 0.15-16 RK
C19	87-010-198-080		C-CAP,S 0.022-25 K B
C20	87-010-178-080		C-CAP,S 1000P-50 K B
C21	87-012-393-080		C-CAP,S 0.22-16 K W5R CM/CB
C22	87-016-083-080		C-CAP,S 0.15-16 K R
C23	87-010-197-080		C-CAP,S 0.01-25 K B
C24	87-010-186-080		C-CAP,S 4700P-50 K B
C25	87-010-400-040		CAP,E 0.47-50 SME
C26	87-010-322-080		C-CAP,S 100P-50 J CH
C27	87-010-382-040		CAP,E 22-25 SME
C28	87-010-545-040		CAP,E 0.22-50 SME
C29	87-010-184-080		C-CAP,S 3300P-50 K B
C30	87-010-145-080		C-CAP,S 1P-50 C CH GRM
C31	87-010-186-080		C-CAP,S 4700P-50 K B
C32	87-010-315-080		C-CAP,S 27P-50 CH
C33	87-016-081-080		C-CAP,S 0.1-16 K R
C35	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C37	87-010-405-080		CAP,E 10-50 M SME
C38	87-010-263-080		CAP,E 100-10 SME
C39	87-010-596-020		C-CAP,S 0.047-16 RK
C40	87-010-401-080		CAP,E 1-50 M SME
C41	87-010-805-080		CAP, S 1-16
C42	87-010-263-080		CAP,E 100-10 SME
C43	87-010-197-080		C-CAP,S 0.01-25 K B
C44	87-010-263-080		CAP,E 100-10 SME
C46	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C47	87-010-260-080		CAP,E 47-25 SME
C48	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C49	87-010-404-080		CAP,E 4.7-50 M SME
C50	87-010-197-080		C-CAP,S 0.01-25 K B
C51	87-010-263-040		CAP,E 100-10 M SME
C52	87-012-156-080		C-CAP,S 220P-50 J CH GRM
C101	87-016-369-080		C-CAP,S 0.033-25 B K
C102	87-016-081-080		C-CAP,S 0.1-16 K R
C103	87-010-321-080		C-CAP,S 82P-50 J CH
C104	87-012-154-080		C-CAP,S 150P-50 J CH GRM
C105	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C109	87-010-197-080		C-CAP,S 0.01-25 K B
C111	87-010-312-080		C-CAP,S 15P
C112	87-010-154-080		C-CAP,S 10P-50 D CH
C113	87-010-322-080		C-CAP,S 100P-50 J CH
C115	87-010-404-080		CAP,E 4.7-50 M SME
C116	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C117	87-010-263-040		CAP,E 100-10 M SME
C118	87-010-178-080		C-CAP,S 1000P-50 K B
C119	87-010-154-080		C-CAP,S 10P-50 D CH
C120	87-018-209-080		CAP, CER 0.1-50V<D,4MD>
C121	87-010-403-080		CAP,E 3.3-50 M SME
C122	87-010-403-080		CAP,E 3.3-50 M SME
C123	87-012-157-080		C-CAP,S 330P-50 J CH GRM
C124	87-012-157-080		C-CAP,S 330P-50 J CH GRM
C131	87-010-382-080		CAP,E 22-25 M SME
C191	87-010-263-040		CAP,E 100-10 M SME
C301	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C302	87-010-382-080		CAP,E 22-25 M SME
C303	87-010-260-080		CAP,E 47-25 SME
C501	87-010-381-080		CAP,E 1000-16 SMG
C502	87-010-197-080		C-CAP,S 0.01-25 K B
C504	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C505	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C506	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C507	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C509	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C510	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C603	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C610	87-010-405-080		CAP,E 10-50 M SME
C611	87-010-405-080		CAP,E 10-50 M SME
C701	87-010-405-080		CAP,E 10-50 M SME
C705	87-010-197-080		C-CAP,S 0.01-25 K B
C706	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C711	87-010-322-080		C-CAP,S 100P-50 J CH
C712	87-010-322-080		C-CAP,S 100P-50 J CH
C713	87-010-322-080		C-CAP,S 100P-50 J CH
C901	87-010-260-080		CAP,E 47-25 SME
C902	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
CON3	84-ZG1-648-010		CONN ASSY,6P<D,4MD>
CON3	84-ZG1-675-010		CONN ASSY,6P (GETA)<Z4>
FC1	85-NFT-611-110		FF-CABLE 16P-1.0
FC4	84-ZG1-614-210		F-CABLE,5P 1.25 210MM<D,4MD>
FC4	84-ZG1-672-010		F-CABLE,5P 1.25 210MM WHITE N<DL>
FC5	84-ZG1-630-010		CABLE FFC 6P-1.25<Z3>
L11	87-005-602-080		COIL,10UH J LAV35
L101	87-005-614-080		COIL,100UH
L102	87-005-602-080		COIL,10UH J LAV35
LED901	87-A40-123-010		LED,SLZ-8128A-01-B
M601	87-045-305-010		MOT,RF-500TB
SFR101	87-A90-787-080		SFR,100K H HOKU<DL>
SFR101	87-024-437-080		SFR100K,RH063EC<D,4MD>
SW701	87-036-109-010		SW,MICRO SPPB61
SW702	87-036-109-010		SW,MICRO SPPB61
X101	87-A70-046-010		VIB,XTAL 16.934MHZ
LED C.B			
LED701	87-A40-316-080		LED,SLR-56PCT31 GRN<D,4MD>
LED702	87-A40-268-080		LED,SLH-56DCT31 ORN<D,4MD>
LED702	87-A40-446-040		LED,SLP-7131F-81H-S-T1 P-GRN<DL>
LED703	87-A40-268-080		LED,SLH-56DCT31 ORN<D,4MD>
LED703	87-A40-447-040		LED,SLP-6130C-81H-S-T1 ORN<DL>
LED704	87-A40-316-080		LED,SLR-56PCT31 GRN<D,4MD>
T-T C.B			
C401	87-018-214-080		CAP,TC U 0.1-50 Z F SA
M401	87-045-364-010		MOT,BCH3B
PS401	87-026-573-010		SNSR,PHOTO GP1S53
MOTOR C.B<Z4>			

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
M2	91-669-930-110		SLED MOTOR ASSY<Z4>
PIN3	91-564-722-110		CONNECTOR 6P<Z4>
SW1	91-572-085-110		LEAF SW<Z4>

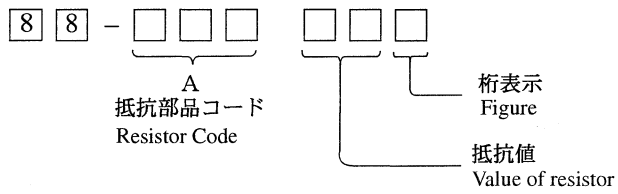
DRIVE C.B<Z3>

M1	87-045-358-010		MOT,RF-310TA 43<Z3>
M2	87-045-356-010		MOT,RF-310TA 30<Z3>
SW1	87-A90-042-010		SW,LEAF MSW-17310MVPO<Z3>

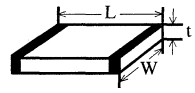
- Regarding connectors, they are not stocked as they are not the initial order items.
  The connectors are available after they are supplied from connector manufacturers upon the order is received.

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Diamensions (mm) 外形 / Form	L	W	t	抵抗コード : A Resistor Code : A
1/16W	1608	5%	CJ		1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

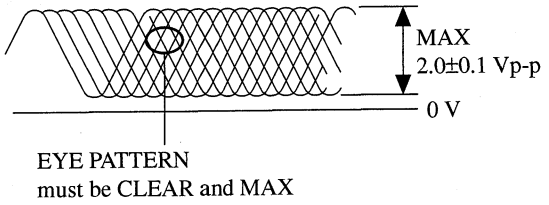
Refer to the following pages for the common section.

- IC BLOCK DIAGRAM ..... See page 7
- IC DESCRIPTION ..... See page 14
- TEST MODE ..... See page 18
- ELECTRICAL ADJUSTMENT ..... See page 19
- MECHANICAL EXPLODED VIEW 1/1 ..... See page 21
- MECHANICAL PARTS LIST 1/1 ..... See page 22

WAVE FORM

① IC11 Pin ㊶ (RFSM)

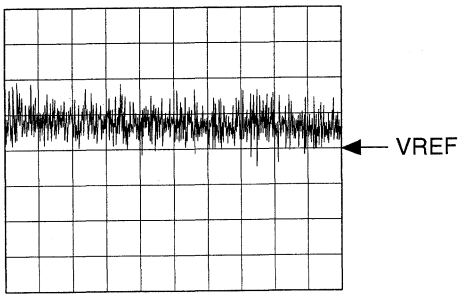
VOLT/DIV: 0.5V
TIME/DIV: 1μS



EYE PATTERN
must be CLEAR and MAX

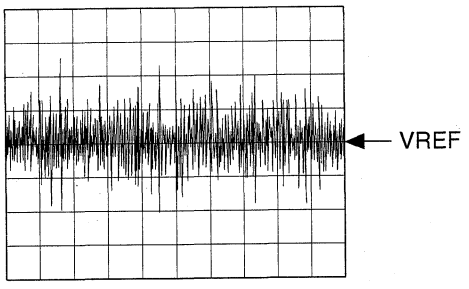
② IC11 Pin ⑯ (FD)

VOLT/DIV: 100mV
TIME/DIV: 1mS



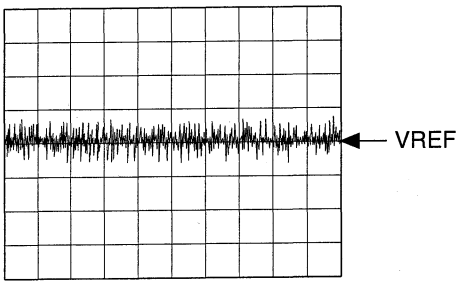
③ IC11 Pin ⑮ (TO)

VOLT/DIV:100mV
TIME/DIV: 1mS



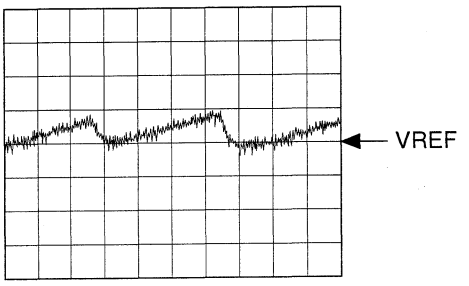
④ IC11 Pin ㉗ (SPD)

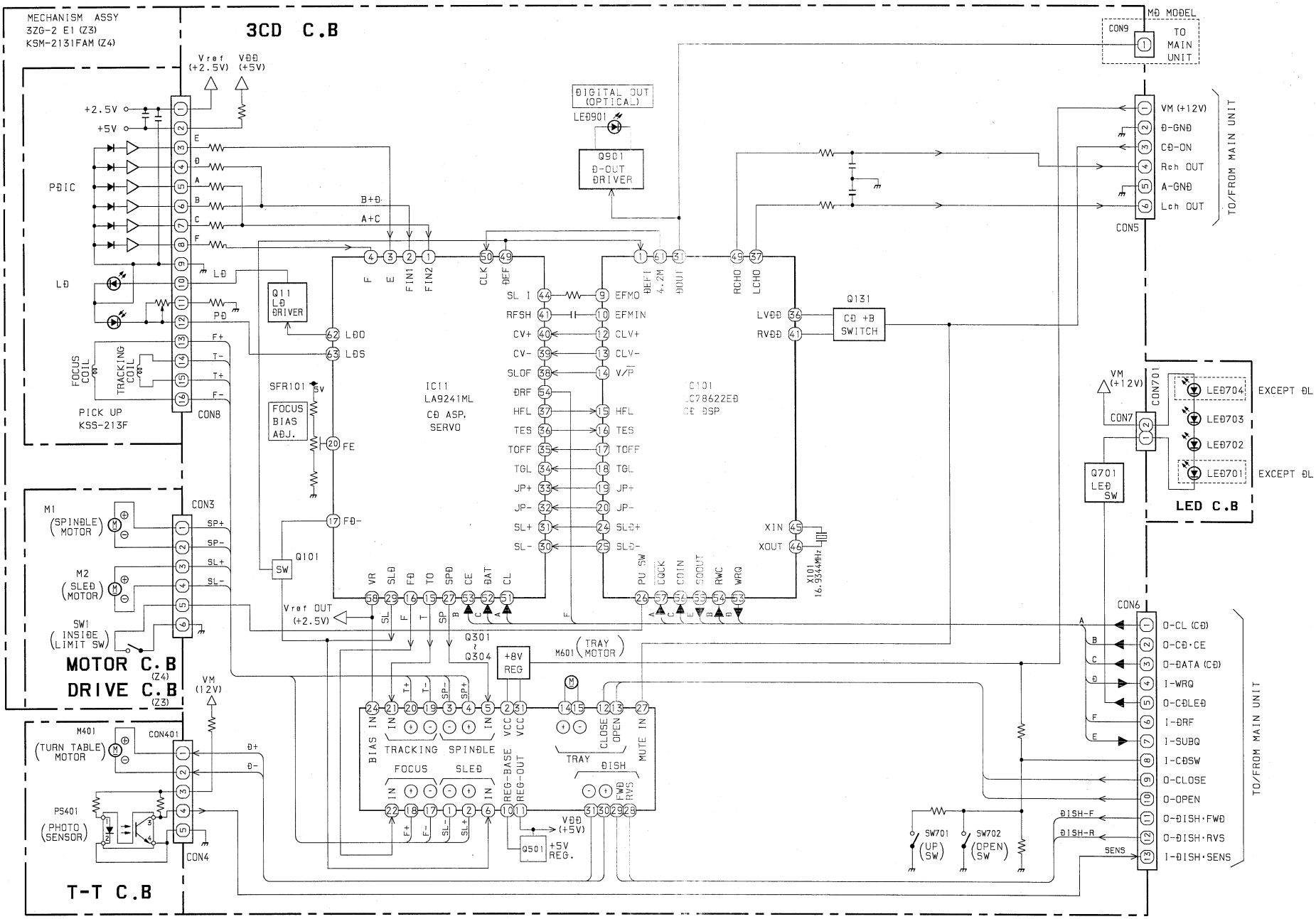
VOLT/DIV: 100mV
TIME/DIV: 1mS

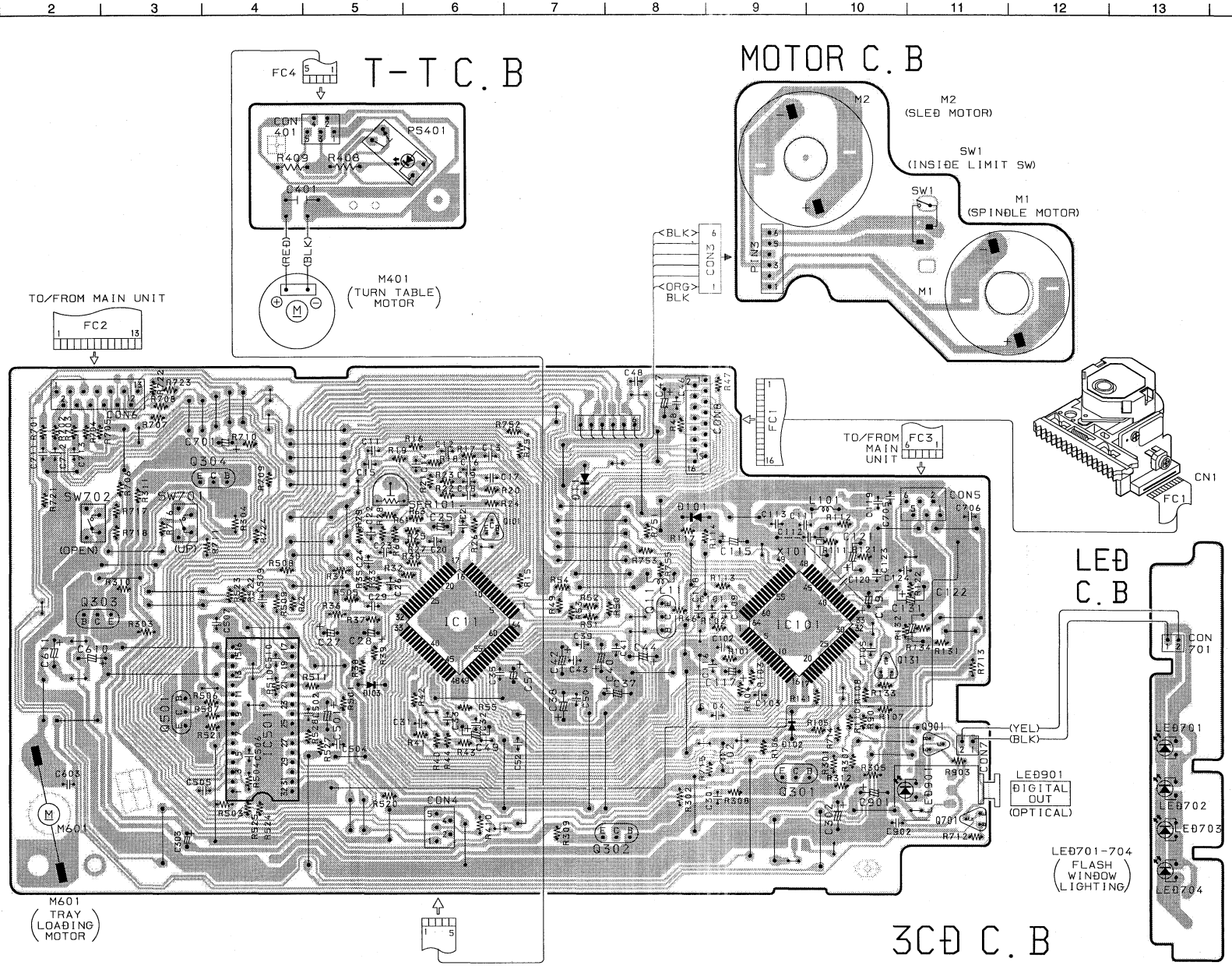


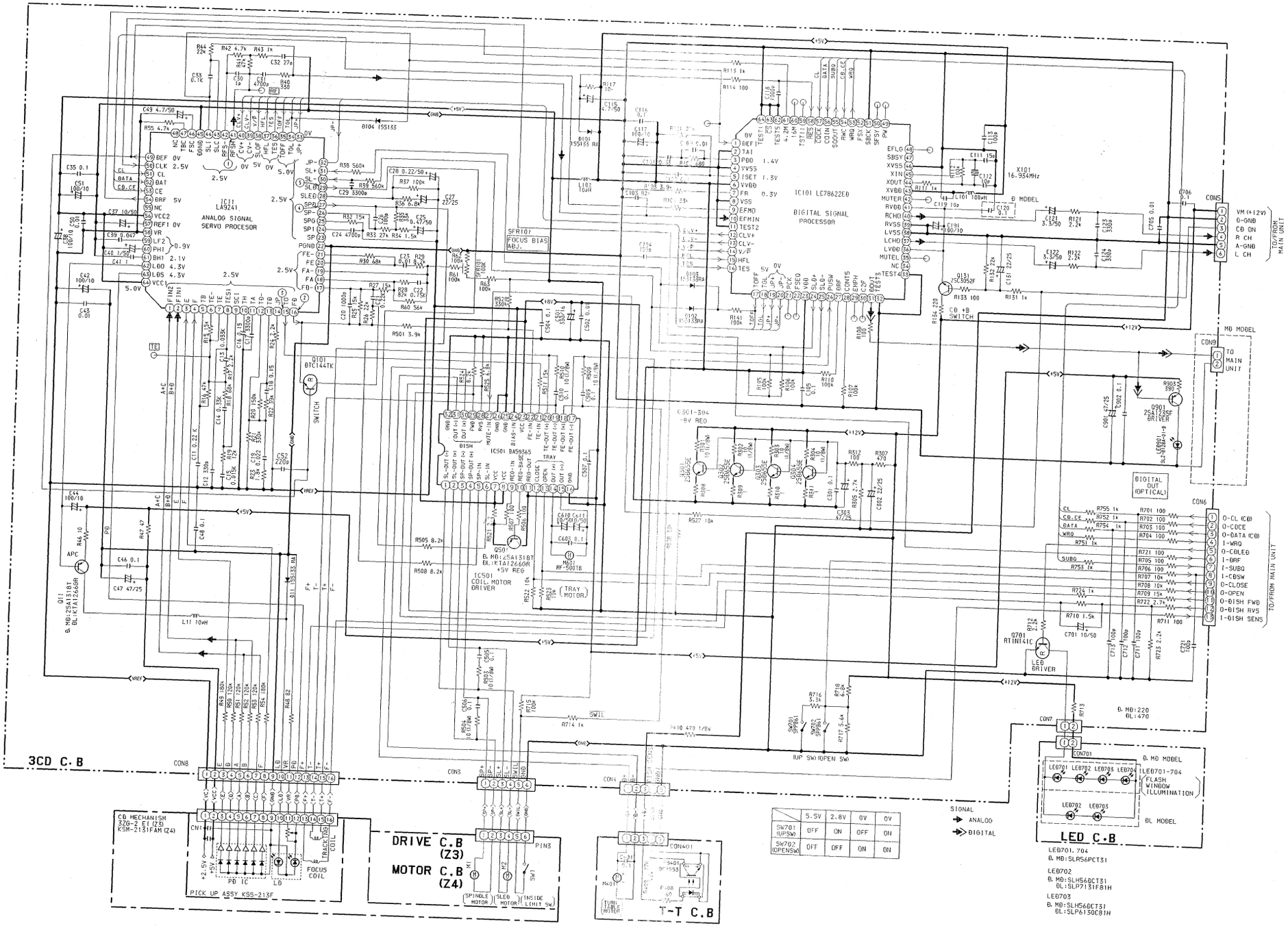
⑤ IC11 Pin ㉙ (SLD)

VOLT/DIV: 200mV
TIME/DIV: 2S

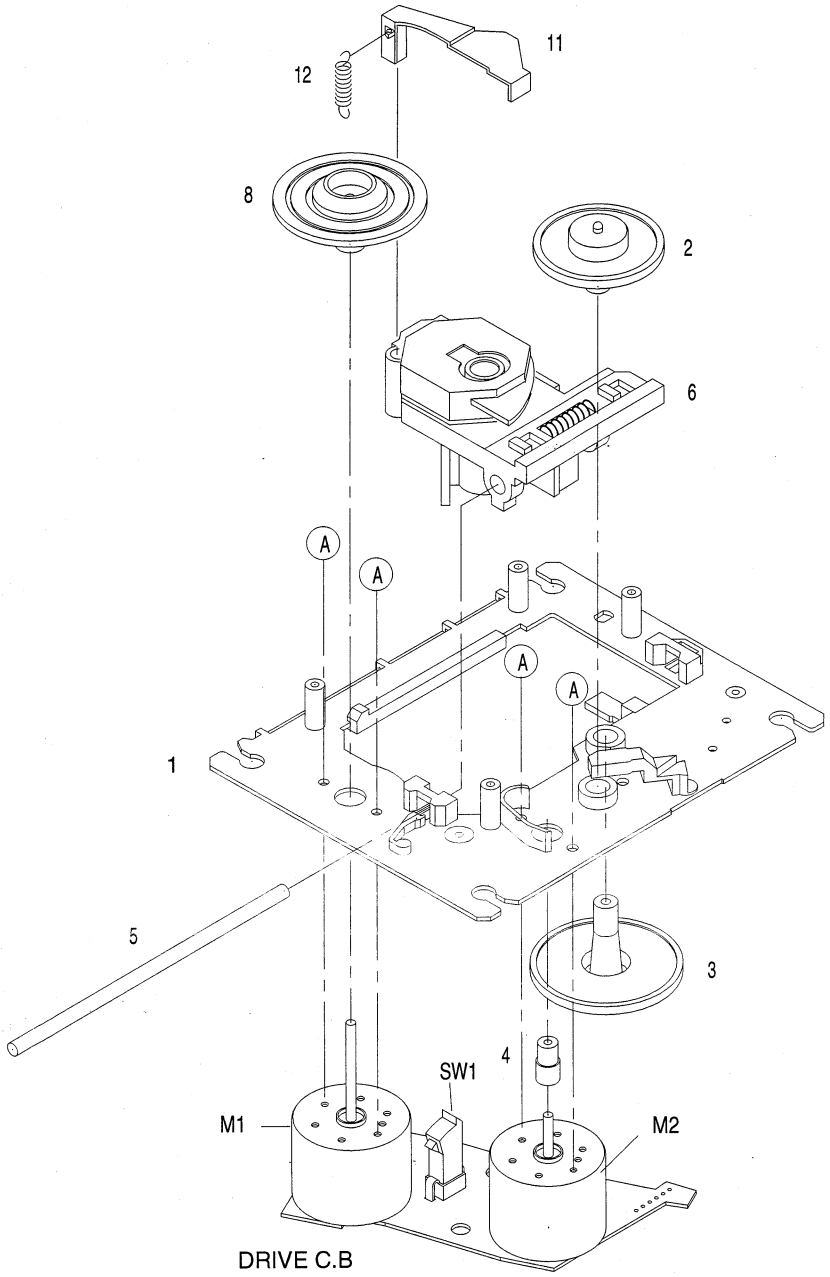



MECHANISM ASSY
3ZG-2 E1 (Z3)
KSM-2131FAM (Z4)
3CD C.B
MD MODEL
CON9
TO MAIN UNIT
DIGITAL OUT (OPTICAL)
LED901
Q901 D-OUT DRIVER
VM (+12V)
D-GND
CD-ON
Rch OUT
A-GND
Lch OUT
CON5
TO/FROM MAIN UNIT
Vref (+2.5V)
VDD (+5V)
+2.5V
+5V
PDIC
LD
Q11 LD DRIVER
FOCUS COIL
TRACKING COIL
PICK UP KSS-213F
CON8
SFR101
FOCUS BIAS ADJ.
IC11 LA9241ML CD ASP, SERVO
IC101 LC78622ED CD DSP
Q131 CD +B SWITCH
LED C.B
CON7
LED704
LED703
LED702
LED701
EXCEPT DL
Q701 LED SW
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
CON3
MOTOR C.B (Z4)
DRIVE C.B (Z3)
Q101 SW
Vref OUT (+2.5V)
Q301 ~ Q304
+8V REG
M601 (TRAY MOTOR)
TRACKING
SPINDLE
FOCUS
SLED
TRAY
DISH
CON6
O-CL (CD)
O-CD·CE
O-DATA (CD)
I-WRQ
O-CDLED
I-DRF
I-SUBQ
I-CDSW
O-CLOSE
O-OPEN
O-DISH·FWD
O-DISH·RVS
I-DISH·SENS
TO/FROM MAIN UNIT
M401 (TURN TABLE MOTOR)
CON401
PS401 (PHOTO SENSOR)
CON4
T-T C.B
SW701 (UP SW)
SW702 (OPEN SW)
Q501 +5V REG.
X101 16.9344MHz


T-T C.B
FC4
CON401
PS401
R409
R408
C401
(RED)
(BLK)
M401
(TURN TABLE MOTOR)
MOTOR C.B
M2
M2
(SLED MOTOR)
SW1
(INSIDE LIMIT SW)
M1
(SPINDLE MOTOR)
PIN3
<BLK>
<ORG>
BLK
CON3
TO/FROM MAIN UNIT
FC2
FC1
TO/FROM MAIN UNIT
FC3
CN1
FC1
LED C.B
CON701
LED701
LED702
LED703
LED704
LED901
DIGITAL OUT
(OPTICAL)
(YEL)
(BLK)
LED701-704
(FLASH WINDOW LIGHTING)
M601
(TRAY LOADING MOTOR)
3CD C.B
SW702
SW701
(OPEN)
(UP)
IC11
IC101
IC501
Q304
Q303
Q301
Q302
Q501
CON5
CON4
CON7


3CD C.B
DRIVE C.B (Z3)
MOTOR C.B (Z4)
T-T C.B
LED C.B
CD MECHANISM 320-2 E1 (Z3) KSM-2131FAM (Z4)
PICK UP ASSY KSS-213F
IC11 LA9241 ANALOG SIGNAL SERVO PROCESOR
IC101 LC78622E0 DIGITAL SIGNAL PROCESSOR
IC501 BA5954S COIL MOTOR DRIVER
IC501 +8V REG
Q501 +5V REG
Q701 RT1N141C LED DRIVER
Q901 2SA1235E DRIVER
Q131 2SC3052F CD +B SWITCH
Q101 DTC144TK SWITCH
X101 16.934MHz
SFR101 FOCUS BIAS ADJ.
CON1
CON2
CON3
CON4
CON5
CON6
CON7
CON8
CON9
CON401
CON701
TO/FROM MAIN UNIT
DIGITAL OUT (OPTICAL)
MD MODEL
DL MODEL
SIGNAL
ANALOG
DIGITAL
SW701 (UP SW)
SW702 (OPEN SW)
LED701, 704
LED702
LED703

CD MECHANISM EXPLODED VIEW 1/1 (3ZG-2 E1)

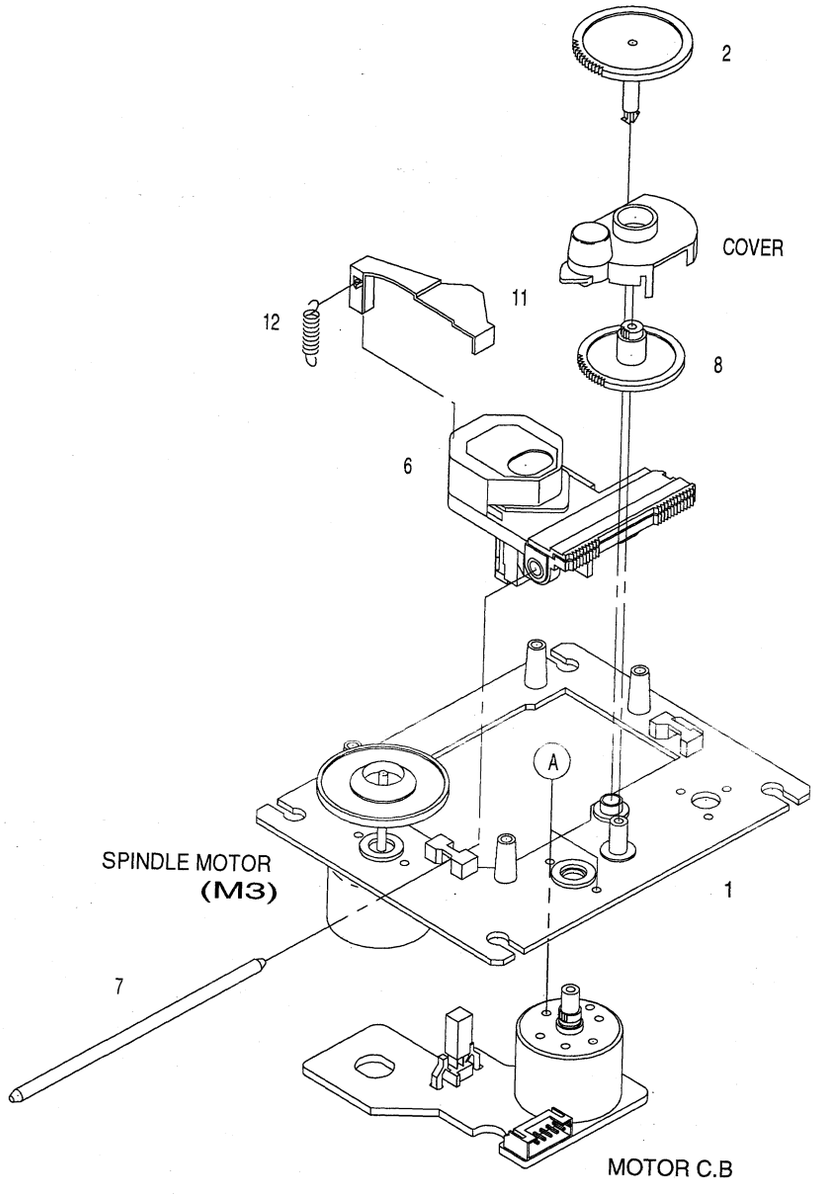


CD MECHANISM PARTS LIST 1/1 (3ZG-2 E1)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	83-ZG2-243-110		CHAS ASSY,SHT
2	83-ZG2-235-010		GEAR,A3
3	83-ZG2-205-210		GEAR,B
4	83-ZG2-236-010		GEAR MOTOR 3
5	83-ZG2-240-010		SHAFT,SLIDE 3
6	87-A90-836-010		PICKUP,KSS-213F
8	83-ZG2-233-010		TURN TABLE,A5
11	83-ZG2-245-110		LEVER,SHUTTER
12	83-ZG2-250-010		SPR-E,SHT 2
A	87-261-032-210		SCREW V+2-3

CD MECHANISM EXPLODED VIEW 1/1 (KSM-2131 FAM)



CD MECHANISM PARTS LIST 1/1 (KSM-2131 FAM)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	9X-262-629-220		MOTOR CHASSIS ASSY(MB)(FR)
2	92-626-907-010		GEAR(A)(S)
6	87-A90-836-010		OPTICAL PICK UP KSS-213F
7	92-626-908-020		SHAFT SLED
8	92-627-003-010		GEAR(B)
11	92-646-697-020		LENS SHUTTER(F)
12	92-646-702-010		SPRIG EXTENSION
A	97-621-255-150		SCREW+P2-3

USE MODEL LIST

1. CX-SNS208
2. CX-NS203
3. CX-NS202
4. CX-NS205
5. CX-ZR220
6. CX-ZR222
7. CX-NH33MD
8. CX-SNH33MD
9. CX-SNH35MD
10. CX-SNH37MD
11. CX-SN3000M
12. CX-NS5LH
13. CX-NS307
14. CX-NS303
15. CX-NS306
16. CX-NA303
17. CX-SNS303
18. CX-SNS909

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
番号	連絡内容
G— —	
G— —	
G— —	

アイワ株式会社
AIWA CO.,LTD.

912162

Tokyo Japan

〒110-8710 東京都台東区池之端1-2-11 ☎03（3827）3111（代表）

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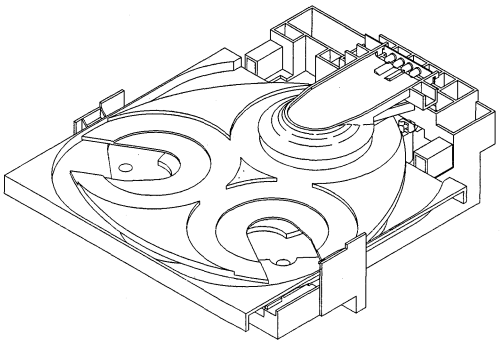
aiwa

aiwa SERVICE

4ZG-1Z3
4ZG-1Z4

SERVICE MANUAL



CD MECHANISM

• BASIC CD MECHANISM: KSM-2131BAM 3ZG-2 E1 KSM-2131FAM

• TYPE: English

SUPPLEMENT

BASIC NAME	DERIVATION NAME							
4ZG-1Z3	D	—	—	—	—	—	—	—
	D	DL	SH	R	—	—	—	—
4ZG-1Z4	D	DL	SH	MD	R	—	—	—

NOTE : 4ZG-1Z3 have the same BASIC NAME but use the different mechanisms.

■ This Service Manual has various derivation.Derivation name is indicated by the Service Manual for each model.

■ This Service Manual contains information about the difference between 4ZG-1Z3/ 4ZG-1Z4. If requiring the other information ,see Service Manual of 4ZG-1Z3/ 4ZG-1Z4 (S/M Code No.09-983-249-3OT)

S/M Code No. 09-983-249-3S2

This is the SERVICE MANUAL for the BASIC CD MECHANISM of BASIC NAME: 4ZG-1. This BASIC NAME includes the following models as shown under the SUFFIX name: DERIVATION NAME. Please use this manual with the separate SERVICE MANUAL for DERIVATION NAME.

BASIC CD MECHANISM: 4ZG-1Z3 DSH

SUFFIX
(DERIVATION NAME)

BASIC NAME: 4ZG-1Z3 (THE 3rd SANYO IC MODEL)
4ZG-1Z4 (THE 4th SANYO IC MODEL)

BASIC NAME	DERIVATION NAME							
4ZG-1Z3	D	—	—	—	—	—	—	—
	D	DL	SH	R	—	—	—	—
4ZG-1Z4	D	DL	SH	MD	R	—	—	—

NOTE : 4ZG-1Z3 have the same BASIC NAME but use the different mechanisms.

DERIVATION NAME

D: Digital output function
DL: Digital output function (CD WINDOW Flash function LOW END Type)
MD: Digital output for Mini Disc
SH: Pick up equipped with shutter
R: Defference of tray

MECHANICAL PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	84-ZG1-239-210	0E	PULLY,WORM N
2	81-ZG1-212-010	0E	PULLY,LOAD MO
3	81-ZG1-239-010	0E	S-SCREW,TT
4	81-ZG1-291-110	0E	GEAR,TRAY RELAY NO3
5	81-ZG1-271-010	0E	S-SCREW MECH REAR
6	81-ZG1-277-310	1A	HLDR,MAGNET N
7	81-ZG1-255-110	0E	PLATE,MAGNET MK2
8	83-ZG3-213-010	0E	LVR,SW
9	84-ZG1-008-110	1H	TRAY,NO3
10	87-045-364-010	1F	MOTOR(BCH3B14)
11	84-ZG1-005-210	1H	TURNTABLE,NO1(*)
12	84-ZG1-011-010	1A	REFLECTOR,CD
13	84-ZG1-248-010	0E	SPR-C,WORM
14	84-ZG1-208-210	0E	LEVER,CAM
15	84-ZG1-209-010	0E	BELT,SQ1.8-117.7
16	84-ZG1-211-010	0E	SPR-E CAM S
17	84-ZG1-215-410	1B	GEAR,MAIN CAM BLU
18	84-ZG1-216-310	1A	SLIDE,MECHA CAM YEL
19	84-ZG1-205-110	1A	GEAR,TRAY
20	84-ZG1-206-110	0E	GEAR,RELAY
21	84-ZG1-207-010	0E	PULLEY,RELAY
22	84-ZG1-221-010	1B	GEAR,MAIN TT
23	84-ZG1-238-010	1A	GEAR,WORM N
24	84-ZG1-224-010	0E	LEVER,TT
25	84-ZG1-225-010	0E	BELT,SQ1.0-63.3
26	84-ZG1-268-010	0E	MAGNET,CLAMPER 97<Z4>
26	83-ZG3-602-010	1A	RING,MAG<Z3>
27	87-045-305-010	1F	MOTOR, RF-500TB DC-5V (2MA)
28	84-ZG1-259-010	0E	SPR-P,WORM
29	84-ZG1-244-310	1A	CABI,OPTICAL
30	84-ZG1-261-010	0E	LID,OPTICAL
A	87-067-703-010	0E	TAPPING SCREW, BVT2+3-10
B	87-251-070-410	0E	U+2.6-3
C	87-067-981-010	0E	BVT2+3-6 BLK

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
番号	連絡内容
G— —	
G— —	
G— —	

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